THE OIL WEEKLY

ENGINEERING « NEWS » STATISTICS

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The Oil Man's Calendar

JUNE 20-24	American Society of Mechanical Engineers, St. Louis, Missouri.
26-31	Michigan Petroleum Exposition, Mt. Pleasant, Michigan
JULY 27-28	West Virginia Oil and Natural Gas Association, Charleston, West Virginia.
SEPT. 14-16	National Petroleum Association, Hotel Traymore, Atlantic City.
27 OCT. 2	American Association of Petroleum Geologists, Mid-Year Meeting, El Paso, Texas.
OCT. 10-14	American Gas Association, Atlantic City, New Jersey.
12-13	Indiana Independent Petroleum Association, Hotel Severin, Indianapolis, Indiana.
19-21	Independent Petroleum Association of America, Tulsa, Oklahoma.
27-29	Annual Convention Texas Division, Mid-Continent Oil & Gas Assn., San Antonio, Texas
NOV. 14-18	American Petroleum Institute, (Annual), Stevens Hotel, Chicago.
DEC.	Mid-Continent Oil & Gas Assn., Standing Tax Committees, Dallas, Texas.

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NOTE THESE FEATURES

Oversize, flood-lubricated bearings . . . Reinforced sills at anchor bolt foundations . . . Leveling screws in base . . . Split hub cranks with set screws for spreading hub . . . "Banjo" Type Pitmans . . . Split Nuts on engine adjusting screws . . . Adjustable saddle bearings.

This Week's Panorama

SOME loosening of the restriction on crude oil production appears in prospect for July, as C. V. Terrell, chairman of the Texas Railroad Commission, stated early last week that he then could see no reason why the Saturday shutdowns of Texas oil fields could not be lifted in July.

The commission will officially consider the question of Sunday and Saturday shutdowns when it holds the monthly statewide proration hearing at Austin June 20, preparatory to issuing orders for restricting production in July.

The commission chairman cited figures to show that crude oil stocks had been decreasing substantially, that crude runs to refinery stills had been quite moderate, and that some decline in gasoline stocks had been in progress.

Statistical Situation

Shortly after the chairman commented on the situation, new weekly statistics became available, and they showed no material change in conditions.

In the week ended June 11, crude oil production was 10.9 percent lower than in the corresponding period last year, while refinery runs were 2.9 percent lower. These moderate operations helped to reduce existing surpluses of gasoline, the inventories having been cut down 1,618,000 barrels during the week. They then stood at 86,149,000 barrels, or 11.8 percent higher than one year previously. The gasoline inventory situation gradually is being corrected, and prices consequently have been improving.

Fuel oil stocks, however, remain entirely too high, in consequence of lagging demand, being 38.6 percent above the levels of a year ago.

Pennsylvania Crude Cut

The 25 cent reduction last week in prices of Pennsylvania grade crude generally were regarded as of only local importance.

The reduction was described as reflecting materially curtailed industrial demand for lubricants, rather than any substantial decline in requirements of motorists.

Oklahoma-Kansas Markets

The Oklahoma crude oil market has been materially strengthened by the low allowables lately in effect. Although one large purchasing company is taking less than allowable production, others have lifted pipe line proration, and one big buyer is taking back-allowable output that was temporarily not purchased under former, higher allowables.

The upper Mid-Continent purchasers appreciate the cooperative course that has been taken by the Oklahoma conservation officials. But they resent the arbitrary attitude of the governor and corporation commission of Kansas, who have fixed allowable production, flourished a big stick, and demanded that purchasers buy the allowable whether they needed it or not.

The purchasing companies have declined to take more than their requirements, and, called before the Kansas commission for explanation, they contended their action was within their legal rights.

Another Session and More Laws

As the session of Congress came to the end last week, several measures of specific and general importance to the oil industry had been made into law. The $3,753,000,000 lending-spending bill finally was agreed upon in the closing days and so was the wage and hour control bill.

The lend and spend bill calls for outlay of vast sums for work relief, direct relief, public works pump priming.

The wage-hour bill calls for a 25-cent minimum wage the first year, 30 cents in each of the 6 succeeding years, and 40 cents after 7 years. An industrial board for each industry will endeavor, however, to push the wages up to 40 cents as soon as possible. In the South, slightly lower standards will be permitted. Business apparently is generally opposed to the lending-spending plan as being economically unsound, but is preparing to cash in on any business it may stimulate, however temporary it may be.

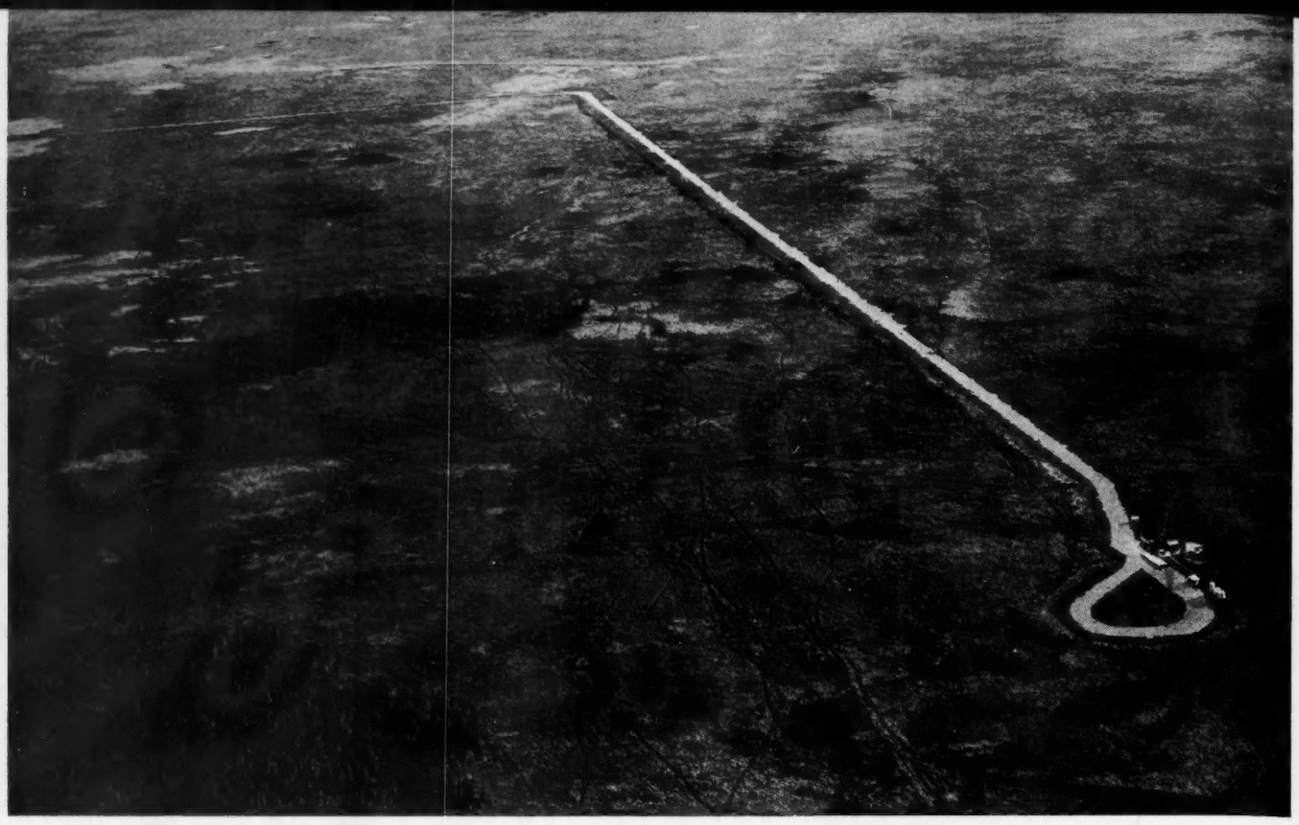
The wage-hour measure is looked upon generally with suspicion, despite the contentions of proponents that it is a step in the direction of improving standards of living. The critics see it as another entering wedge for government control of business, characterizing it as an NRA type of legislation.

Wholesale Trade in Oil Good

The Department of Commerce has reported that the dollar volume of wholesale trade in April, 1938, was 18½ percent smaller than in April, 1937. That was the largest decrease in sales from the same month of the previous year recorded during the decline that began last October.

The total volume of accounts receivable outstanding on April 1, 1938, was 11 percent smaller than on the same date last year, it was reported.

Cost value of stocks on hand at the end of April was 12 percent smaller than at the end of April last



A new deep producing record will be established if this Southern Louisiana wildcat produces. The well is Fohs Oil Company's Buckley Bourg 1 on the West Dulac prospect in Terrebonne Parish, and has been drilled to 13,333 feet, which is the second deepest drilled test in the world. Preparations are being made to test the well from 13,254 to 13,266 feet, which would establish a new world's producing depth record if productive. A long canal, as can be seen in the picture, was dug to the well site. This enables the operators to move in material in the swampy area. The derrick may be seen in the lower right-hand corner at the turning basin.

year, according to reports from over 1100 wholesalers.

April sales in all trades except tobacco were under last April. The petroleum trade, however, was among a group showing only moderate declines, distributors of petroleum reporting a loss of 7 percent in sales.

Automobile Sales Lagging

Not much comfort is available in the statistics on automobile production and sales this year. It now is believed that sales will be around 50 percent lower for 1938 than for 1937.

The Automobile Manufacturers Association estimated factory sales of cars and trucks in the United States and Canada in May at 211,300 units, compared with 540,377 in May, 1937. Sales in the first 5 months of 1938 totaled 1,118,800 units, compared with 2,395,716 in the similar period last year.

Market Digests

Outlook—Further improvement of gasoline tank car prices is encouraging, but indications that crude production curtailment may be loosened in July causes some anxiety.

Crude Markets—The 25-cent reduction of Pennsylvania grade crude is regarded generally as reflecting local situation rather than weakness of national markets. Mid-Continent prices appear firm.

Refined Oil Markets—Generally steady, following increases of 1/8 to 1/4 cent a gallon in gasoline tank car prices in the Mid-Continent.

Technology

Filtration evaluation of drilling muds is a new development that promises many benefits. In this issue is presented a discussion of the evaluation properties of drilling muds, in which a method for the presentation of laboratory data is given. By this method the individual factors determining filtration may be isolated and evaluated for any particular mud, and the significance of each factor is discussed.

Oil-lifting problems at Kettleman Hills are increasing as the formation pressure declines, water encroaches, and the fluid level subsides. The problem is sure to be more acute as the field becomes older, consequently there is much interest in the subject at the moment. The methods and difficulties being used and encountered at Kettleman Hills are explained on page 36.

The importance of well-depth measurements has been emphasized by the difficulties encountered in successfully completing wells where relatively thin oil-producing sections are encountered in intimate contact with gas and water sands, especially at the increasingly greater depths now drilled. The second part of a series of articles on this subject appears in this number. The articles discuss the methods and equipment used in measuring depths, the errors arising from different practices, and makes recommendations for standardizing the technique of measuring well depths.

Oil Companies Show Better Results Than Many Others

Earnings for 1938 expected to be down around 30 percent . . . Business prospects moderately hopeful . . . Oil benefits from lending-spending doubted

By L. J. LOGAN, Associate Editor

ALTHOUGH oil company earnings in 1938 are running and likely will continue to run lower than in 1937, the industry is showing results much better than the average for all business.

As shown previously in these columns, 25 oil companies in the first quarter of 1938 had 25 percent less aggregate net profit than in the similar period of 1937; while for the industry as a whole the earnings probably were off around 30 percent.

In contrast, the Federal Reserve Bank of New York showed a drop of 66 percent in the aggregate net profits of over 300 industrial and mercantile companies for the first quarter of this year.

In the first four months of 1938, net operating income of Class 1 railroads was down 85 percent.

Second Quarter Creditable

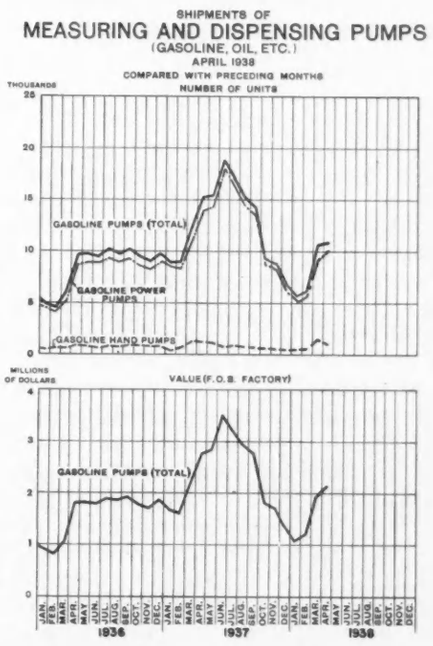
As the second quarter of this year nears the end, it is indicated that oil company profits for the period will be similar to those in the first quarter, although materially lower than in the second quarter of last year, because of lower product prices and somewhat smaller crude oil production and volume of business.

Companies operating on the Pacific Coast are expected to show relatively better second quarter results than the companies of the Mid-Continent, as they did in the initial quarter, because prices have held up better on the West Coast.

Likewise, in the second quarter, as in the first quarter, some of the larger integrated companies on both East and West Coasts are expected to reflect the sustaining influence of continuing good export business.

Companies heavily interested in refining and marketing, and producing relatively smaller proportions of their crude oil requirements, naturally will be likely to show the less favorable results, because of unsatisfactory gasoline and other product prices, in the face of stable crude prices. The prices in the Mid-Continent have been particularly affected, and companies operating extensively there will feel the effects.

While crude prices have been maintained, the strictly producing concerns in the second quarter of 1938, as in the initial quarter, will be affected from the earnings standpoint by the smaller production this year.



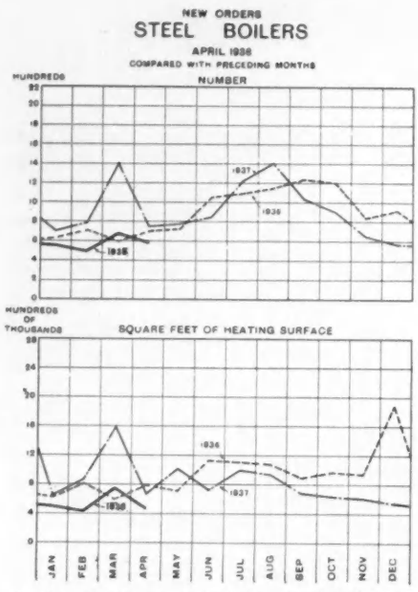
Shipments of pumps for measuring and dispensing gasoline, oil, and so forth, are running lower in 1938 than in 1937, but higher than in 1936.

Shipments of gasoline pumps in the first 4 months of 1938 totaled 30,086, compared with 42,161 in the similar period of 1937, according to the Department of Commerce. Shipments in April, 1938, numbered 10,156 pumps, compared with 14,137 in April, 1937.

Outlook for All of 1938

Some idea of how oil company earnings for all of 1938 will compare with those of 1937 was offered recently in comments of W. S. Farish, president of Standard Oil Company of New Jersey, to stockholders. He made the "guess" that his company probably would show 33 to 35 percent less profit this year than last year, provided conditions continued about the same, but said the company would share in any general business improvement that might occur later in the year. The company's profit in the first four months of the year, he estimated, was about 21 or 22 percent less in 1938 than in 1937; and April was not as good as March and February.

The New Jersey Standard president expressed the opinion crude prices generally would hold at established levels if conservation officials continued prevailing policies. But he pointed out that gasoline and fuel oil prices are relatively low and that industrial lubricant consumption is down, adversely affecting earnings. He re-



In the oil business, as throughout industry, sales of steel boilers have been running substantially lower in 1938 than in 1937 or 1936.

New orders for stationary boilers in the oil country in the first four months of the year totaled 49, compared with 152 in 1937 and 121 in 1936.

In April, 1938, there was 1 order, compared with 20 in March, 24 in April, 1937, and 47 in April, 1936.

These figures are from the latest monthly report of the Bureau of the Census, Department of Commerce.

ferred to existing surpluses of gasoline, but said moderate refinery production promises to correct the inventory situation before the end of the summer-fall consuming season.

General Business Situation

Regarding business prospects, views remain conservative. Expectations are being modified on the much-publicized probable autumn revival. There is talk now of a moderate gain of activity in the fall. Some are indulging in telescopic views, already forecasting 1939 business, when even the closing portion of 1938 is enveloped in fog and clouds. Anyway, some of the prophets say that 1939 likely will bring a bit of improvement, and that the year may be comparable with 1936.

By nearly all it is conceded that no important improvement is likely until after July or August.

As for several weeks past, enthusiasm continues restrained by evidence that this recession is not America's own but a world affair. Commodity prices in the world markets have been under serious pressure, and recession is being experienced increasingly in various countries. Foreign demand for numerous United States commodities and products has been diminishing, although petroleum and petroleum products have continued in large export demand.

Lending-Spending Program

Although the government's spending-lending plan at first generated much inflation talk, it now is widely looked upon with the feeling that it may prove disappointing even as a temporary business stimulant.

A trade publication survey among editors of business papers and sales managers of companies manufacturing industrial equipment indicated relatively little enthusiasm over the probable effect of the lending-spending program on business.

The oil industry has consistently operated, through thick and thin, without asking the government for financial assistance or subsidy; although it undoubtedly has shared in business arising out of government expenditures and loans.

And in the scheduled revival of lending and spending, the petroleum industry likely will have a similar experience—sharing only indirectly, through other industries, in any government-stimulated business.

Effect in Oil Industry

Investigation among oil companies and banks in the oil country fails to reveal any definite ideas as to whether or not any appreciable amount of financing would arise out of the proposed loans through the Reconstruction Finance Corporation.

It is pointed out that any future activities of the R.F.C. will represent merely a continuation of the activities of the past, except that the organization will have 1½ billion dollars more on which to operate. It is stated, further, that loans sought from the R.F.C. are primarily loans that the banks are unwilling to make.

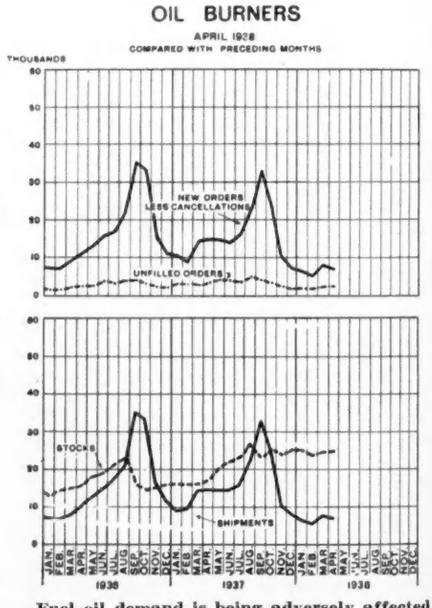
All things considered, it appears rather doubtful if any great amount of business will be stimulated directly in the oil industry by the government's efforts.

Producers vs. Refiners

So far, the petroleum industry has suffered much less than many other industries from the recession, and crude oil prices have not weakened, although they recently had to withstand a serious threat. Consequently, there has not been so far any great amount of distress financially among producers. And the banks in the oil country probably have been adequately taking care of the banking needs in that division of the industry.

Gasoline prices, however, have been unsatisfactory since last fall; and consequently, there has been some financial distress in the refining division. And some independent refiners have been obliged in recent months to close down or dismantle their plants. Consequently, it is conceivable that some of the independent refiners may take advantage of any loans that they can obtain through the R.F.C., although the gasoline market now is showing some improvement, providing some "natural" economic relief for the refiners.

An opinion that apparently stands up under scrutiny is that expenditures in the petroleum industry during the rest of this year will be affected much less by the government's lending and spending than by the general business trends and the conditions in the petroleum industry.



Fuel oil demand is being adversely affected by lagging sales of new oil burners as well as by the reduced operation of oil burners already in use in industry. Shipments of new units have dropped back around the levels of three years ago, having been lower this year than in 1937 or 1936.

In the first four months of the year, shipments by United States manufacturers totaled 27,061 burners in 1938, compared with 48,212 in 1937 and 34,197 in 1936, according to the Department of Commerce.

Shipments in April, 1938, totaled 7,387 burners, compared with 14,682 in April, 1937, and 10,210 in April, 1936.

ABSTRACT

METHOD of presentation of laboratory filtration data is given, by which the individual factors determining filtration may be isolated and evaluated for any particular mud. The significance of each factor is discussed.

Data on typical Gulf Coast muds are presented; and the effects of addition of weighting materials, chemical treatment, and variation of nature and amount of colloidal material are summarized.

The statements and opinions expressed herein are those of the authors, and should not be construed as an official action or opinion of the Institute nor of this publication.

This paper was presented at eighth mid-year meeting, American Petroleum Institute, Allis Hotel, Wichita, Kansas, May 25, 1938.

EVALUATION OF

Filtration Properties of Drilling Muds

By MILTON WILLIAMS and G. E. CANNON
Humble Oil & Refining Company

IN VIEW of the importance of filtration of water from muds, particularly in connection with the drilling of deep wells,[1, 2, 3] current interest in "wall-building" properties of various clays, and the significance of the effect of infiltration of water upon oil-bearing formations,[4, 5] it appears timely to introduce a method of interpretation of laboratory data on filtration. A resume of the effects of various substances on the filtration of an average Gulf Coast mud is also presented.

Heretofore results of filtration tests have usually been expressed in volume of filtrate in one or more time intervals at a given pressure and temperature, and in thickness of the cake so deposited.[2, 3] While this method of reporting results is of value, particularly with reference to field operations, it is desirable to have a more concise and systematic formulation of laboratory results—particularly if in such a method the various factors influencing filtration are indicated.

Based upon Darcy's law, an analytic treatment of filtration in linear flow has been formulated by T. V. Moore.† The equation so developed has been found to express closely the experimental results obtained upon the time-volume of filtrate relation of a large variety of natural and "synthetic" muds at all pressures.

† Production Department, Humble Oil & Refining Company.

The integrated equation has the form:

$$\frac{V}{A} = \sqrt{m\theta + c^2} - c$$

Where:

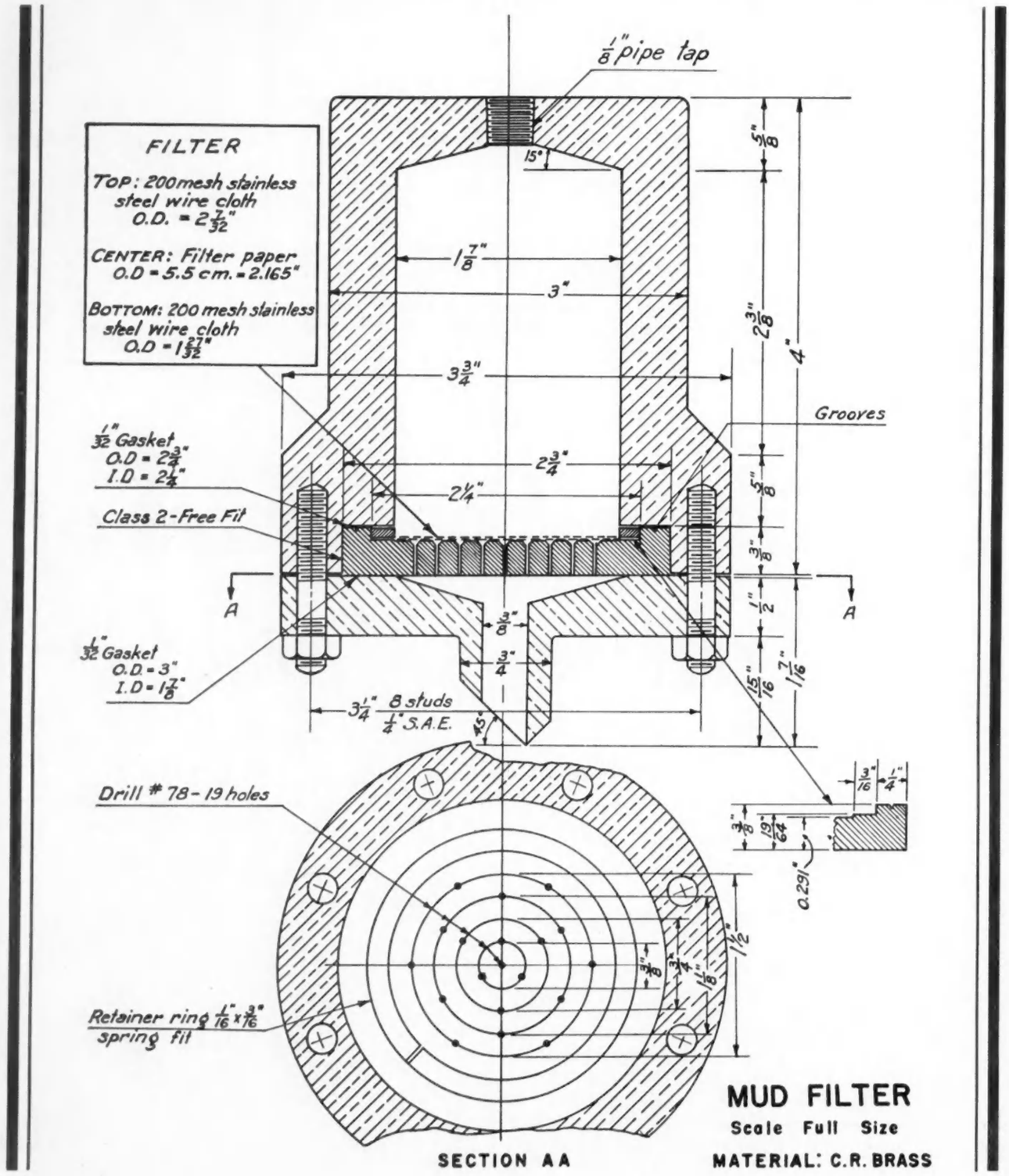
$$m = \frac{2P^{1-s}}{\mu v R' (1-s)}$$

$$c = \frac{A\rho' f(P)}{vR'P^s}$$

The following nomenclature is used (gram, centimeter, second, and atmosphere employed instead of English units for convention of expressing permeability of cake in darcys):

V=cumulative volume of filtrate, cc.
θ=time, sec.
P=operating pressure, atmospheres.
A=cross-sectional area of cake, sq. cm.
v=volume of sludge, cc. per cc. of filtrate.
s=function of compressibility of cake.
$R' = \frac{R}{P^s}$, where R is resistance coefficient of cake.
ρ'=resistance coefficient of filtering medium and sludge contained therein.
μ=viscosity of filtrate, centipoises.

As will be noted, the volume of filtrate per unit area



at a given time is determined by the magnitudes of m and c. At the outset it may be stated that c is important in determining the course of filtration at small values of elapsed time, but its relative effect becomes less as θ increases—until it is of no consequence at large values of θ. Conversely, m is of little interest in the initial filtration, but is the controlling factor once an appreciable amount of cake has been deposited.

The magnitude of m is determined by the values of μ, v, s, and R'. The viscosity of filtrate, μ, is relatively constant for natural muds at a given temperature. In certain cases, as in muds containing sodium silicate, the value of μ may affect the rate of filtration greatly; other substances which would increase the viscosity of the liquid phase might bring about this same effect. Inasmuch as m is inversely proportional to μ, increase of μ decreases amount of filtration in a given time.

Increase of v, the sludge-filtrate ratio, also decreases the rate of filtration; however, in practice, for muds from any particular locality, unless the physical proper-

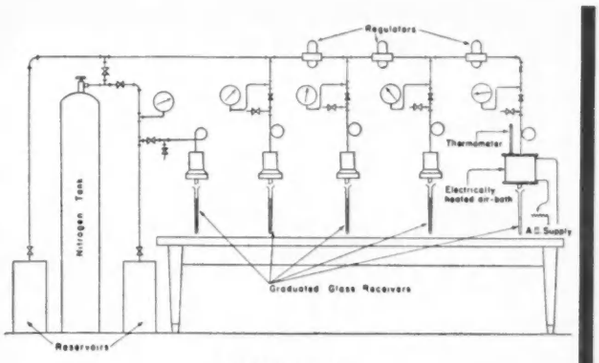


FIGURE 2
Diagrammatic Representation of Filter Set-Up.

ties of the solid phase vary considerably, v usually remains within a narrow range. The addition of inert weighting materials increases v, of course. By physical properties or solid phase, only large variations in specific gravity, particle size and distribution, degree of dispersion, and amount of hydration are considered.

s, the compressibility function, has been found to assume values from 0.80 to 0.87 for the usual unweighted mud. Addition of weighting material ordinarily lowers this value. Chemical treatment affects s very little, if at all. The value of s for an incompressible sludge should be zero; at the maximum compressibility, s approaches unity.

Most Important Factor

R', the resistance coefficient of the filter cake, is the most important factor influencing filtration. It varies from a magnitude of 10^3 for a rapid-filtering mud to the order of 10^6 for those muds which show a minimum amount of filtration. R' appears to depend upon the specific nature of the solid phase, the particle-size distribution, and the state of aggregation of the solid phase. With respect to particle sizes, it appears that a particular distribution leads to optimum filtration properties; what this distribution may be is uncertain; a preponderance of a narrow range of particle sizes, however, is conducive to excessive filtration. R' is increased (decreasing filtration) by the addition of dispersing agents to a mud; conversely, R' is decreased (increasing filtration) by the addition of agglomerating agents to the mud—although the viscosity of the mud is ordinarily lowered in the former case, and increased in the latter case. Relatively large variations of mud viscosity which are effected by small changes in solid content do not change the value of R', as long as the nature of the solid remains unchanged.

Physical Implications Obscure

The c term varies inversely as v, R' P^s, and directly as A, ρ' and f (P). The nature and magnitude of $\rho' f$ (P) appears to be determined by the stability of the mud in regard to agglomeration, inasmuch as it is apparently affected by the addition of dispersing agents. The physical implications of this term, if any, is too obscure to be discussed herein.

Values of the terms m and c are obtained by the following procedure:

V is plotted against θ for each of the several pressures run. Smooth curves are drawn through the points so obtained. Two points are then arbitrarily chosen on each curve; the corresponding values of θ and V are designated as θ_1, V_1, and θ_2, V_2, respectively.

m is then calculated from the relation:

$$m = \frac{\frac{V_1 V_2}{A^2}\left(\frac{V_1}{A} - \frac{V_2}{A}\right)}{\theta_1 \frac{V_2}{A} - \theta_2 \frac{V_1}{A}}$$

And c from the relation:

$$2c = \frac{\frac{m\theta_1}{V_1} - \frac{V_1}{A_1}}{\frac{V_1}{A}}$$

$\frac{P}{m}$ for each pressure is then plotted against P on a log-log graph, and a straight line drawn through these points. The slope of this line is s.

μ, the viscosity of the filtrate, is determined by means of an Ostwald viscosimeter.

v may be approximated by the following procedure: A weighed sample of the mud under consideration is taken to dryness, and weight and volume of residue determined. A weighed portion of the filter cake from the same mud is taken to dryness, the residue weighed, and appropriate corrections for the volume of water retained in the cake during filtration applied to the residue first determined. v is then taken as the volume of solid in mud, plus volume of water retained in the cake, divided by the volume of water in mud, less that retained in cake.

R′ may now be calculated from the relation:

$$\frac{P}{m} = \frac{\mu v R' (1 - s) P^s}{2}$$

inasmuch as all other quantities are known.

It is customary to choose the value of P in this equation to be one, in which case $\frac{P}{m}$ is the value of the intercept of the line with slope s on the ordinate.

No set rule for the evaluation of $\rho' f$ (P) has been adopted as yet, because this term appears to be widely

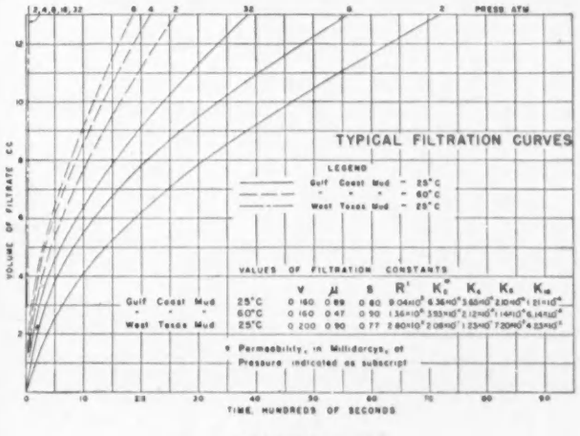


FIGURE 3
Typical Filtration Curves.

TABLE 1

Effect of Weighting Materials on Filtration

Description	Mud Density—Hydrostatic Units (Pressure, Lb. per Sq. In. per 100 Ft.)	Mud Viscosity (Centipoises) at 600 R.P.M.	Temperature (Deg. C.)	v Cubic Centimeters of Sludge per Cubic Centimeter of Filtrate	s	μ Viscosity of Filtrate (Centipoises)	R'	K_2	K_4	K_8	K_{16}	K_{32}
								Permeability of Cake in Millidarcys at Pressures Indicated as Subscripts				
Unweighted.....	50.0	11	25	0.160	0.800	0.894	9.04×10^{5}	6.36×10^{-4}	3.65×10^{-4}	2.10×10^{-4}	1.21×10^{-4}	6.90×10^{-5}
Weighting material added.....	59.7	13	25	0.256	0.660	0.894	4.12×10^{5}	1.38×10^{-3}	9.70×10^{-4}	6.14×10^{-4}	3.90×10^{-4}	2.46×10^{-4}
	67.5	30	25	0.383	0.600	0.894	2.53×10^{5}	2.61×10^{-3}	1.73×10^{-3}	1.14×10^{-3}	7.47×10^{-4}	4.95×10^{-4}
	75.4	40	25	0.462	0.545	0.894	2.13×10^{5}	3.31×10^{-3}	2.21×10^{-3}	1.51×10^{-3}	1.04×10^{-3}	7.10×10^{-4}
	83.1	66	25	0.655	0.320	0.894	1.28×10^{5}	6.25×10^{-3}	5.00×10^{-3}	4.02×10^{-3}	3.21×10^{-3}	2.58×10^{-3}
Unweighted.....	50.0	..	60	0.160	0.900	0.469	1.36×10^{6}	3.93×10^{-4}	2.12×10^{-4}	1.14×10^{-4}	6.14×10^{-5}	3.28×10^{-5}
Weighting material added.....	59.7	..	60	0.256	0.833	0.469	5.11×10^{5}	1.10×10^{-3}	6.14×10^{-4}	3.53×10^{-4}	1.54×10^{-4}	1.10×10^{-4}
	67.5	..	60	0.383	0.692	0.469	2.06×10^{5}	3.00×10^{-3}	1.86×10^{-3}	1.15×10^{-3}	7.10×10^{-4}	4.43×10^{-4}
	75.4	..	60	0.462	0.500	0.469	1.03×10^{5}	6.90×10^{-3}	4.85×10^{-3}	3.44×10^{-3}	2.44×10^{-3}	1.72×10^{-3}
	83.1	..	60	0.655	0.428	0.469	7.73×10^{4}	9.70×10^{-3}	7.15×10^{-3}	5.29×10^{-3}	3.94×10^{-3}	2.93×10^{-3}

variant for different muds. Generally, $f(P)$ seems to be an exponential function, the exponent being less than unity. ρ' is usually negative, although large positive values are not unusual in certain cases.

No relation between the quantities s, R', $\rho' f(P)$ and temperature has been devised as yet. The logical practice, if such relations were desired, would be to make runs at three or more temperatures, calculate these quantities at each, plot against temperature, and interpolate for intermediate values.

It is convenient to interpret the resistance of filter cake in terms of permeability. This conversion is made by multiplying R' *by* P^s, and taking the reciprocal thereof. As all units used in the evaluation of R' are those appearing in the definition of the "darcy," it follows that the permeability term is given directly in darcys.

Experimental Results

A sketch of the apparatus, together with flow diagram of the set-up employed, is shown in Figures 1 and 2, from which the details of the filters are obvious. Although the construction of the filters is such that pressures as high as 2000 pounds per square inch may be employed with safety, it has been the practice to use four or more pressures ranging from 2 to 32 atmospheres in each series of runs. This range has been found to be adequate for representative data.

For runs made at temperatures higher than those which prevail in the laboratory, the filters are enclosed in electrically-heated air baths. Such an arrangement is indicated in Figure 2.

From Typical Well

Shown in Figure 3 are the volume of filtrate-time curves of samples of mud from a typical Gulf Coastal well, run at 25 and 60° C., and a mud from a West Texas well. The former constituted native shale encountered in the hole only; while the latter was made from commercial clays, with addition of lime and contamination by salt.

As will be noted, the West Texas sample filters much more rapidly than that from the Gulf Coast. The higher temperature run on the latter sample, in turn, filters more rapidly than that made at room temperature.

Also shown in the same illustration are the values of v, μ, s, R', and cake permeabilities for these runs. The R' values for the West Texas sample are of the order of magnitude of 10^8, while R' for the 25° C. run on the Coastal mud is of the order of 10^5. In this particular case R' for the higher temperature run on the Coastal mud is slightly greater than that for the 25° C; this appears to be contrary to the usual experience, because R' ordinarily decreases slightly with temperature. The higher rate of filtration at the elevated temperature is due primarily to the decreased viscosity of the liquid phase, although the higher value of s contributes a small effect in this direction.

Cause of High Rate

The extremely high rate of filtration for the West Texas mud is due entirely to the very low value of R'. Inasmuch as this sample contained high percentages of salt and lime, both of which were effective in agglomerating the mud, it is logical to assume that the coagulation of the clays is to blame for the low cake resistance. Data presented in a succeeding section tend to substantiate this premise.

The effect of addition of weighting material to the same Coastal mud is shown in Table 1. As will be noted, increasing the mud density with this type of inert material decreases the values for R' and s, with increasing values for v. It was found that the rate of filtration could be varied considerably by adding weighting materials having a varying particle-size distribution, a preponderance of particles encompassed in a very narrow particle-diameter range giving the maximum amount of filtration.

The cake permeabilities are tabulated in millidarcys at the pressures indicated.

At each temperature, the cake permeability increases with increased addition of weighting material.

Effect of Chemical Treatment

The effect of chemical treatment on three Coastal muds is shown in Table 2. The mud sample labeled No. 1 is the same as that used in obtaining the data shown

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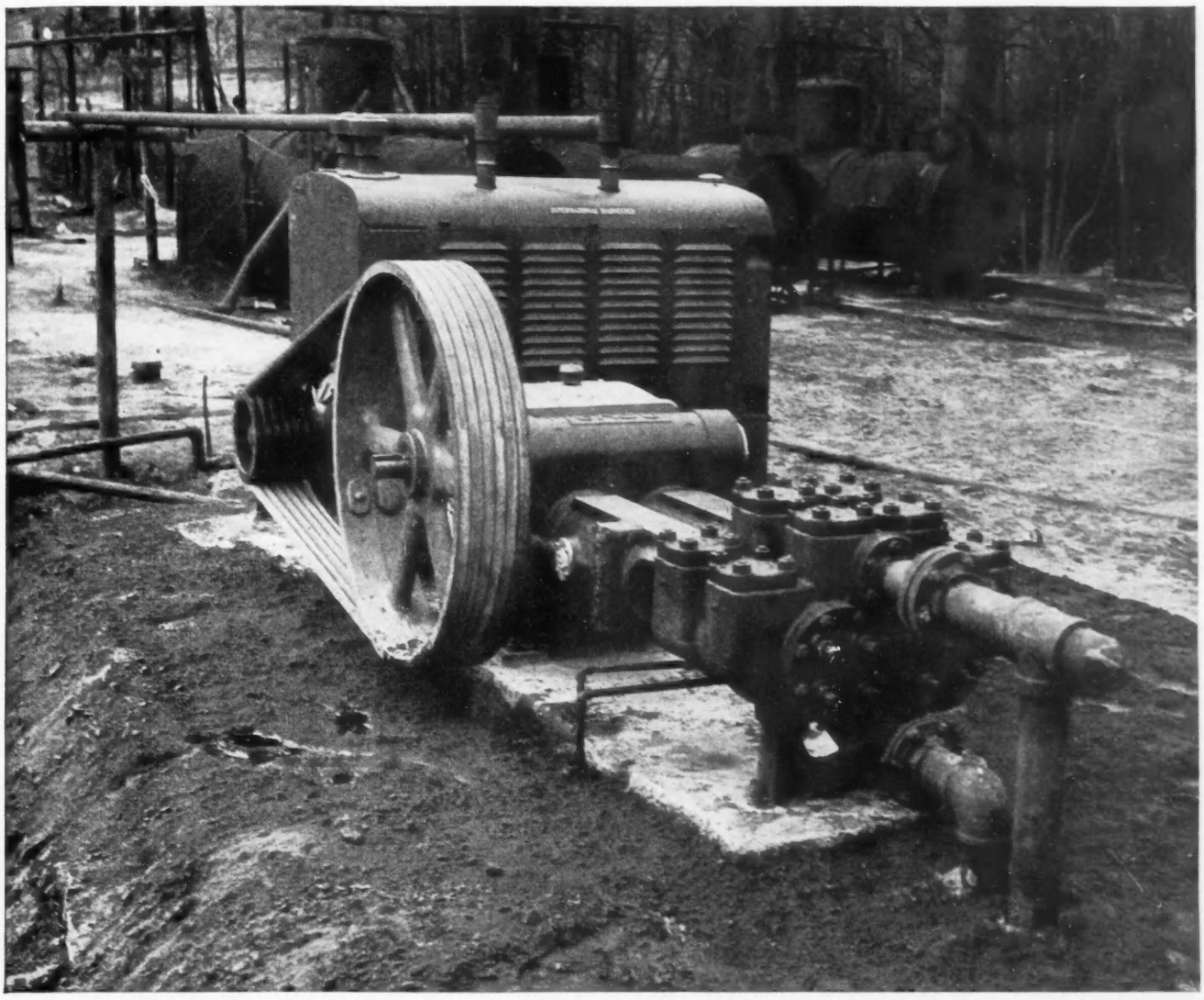

Above: Oil from 90 wells is gathered in stock tanks at the location shown here and then pumped a distance of 12 miles at the rate of 240 barrels an hour by this International PA-100 Power Unit which powers a 5 x 10 pump, 50 strokes a minute, 400 pounds pressure. This International replaced the steam plant, shown in the background, last year. With steam, another booster was required to pump the oil the last three miles. P. H. Pewitt, owner of this International in the East Texas field, is now installing 15 International P-30 Power Units to provide power for wells going on the pump.

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in Table 1. The other samples are from nearby fields.

The addition of both lime and salt causes slight decrease in R' values. Conversely, the two dispersing agents used, sodium hexametaphosphate and sodium tannate, increase the R' values slightly. It may be pointed out that these untreated muds show very favorable filtration characteristics; the lack of more marked response of R' to variation effected by the addition of both agglomerating and dispersing agents is apparently inherent in a "stable" mud. Partly-agglomerated muds, whose viscosity is reduced materially by the addition of dispersing agents, will usually show markedly lower rates of filtration after treatment due to the higher R' values.

Value of s

The values of s remain constant for the muds to which dispersing agents are added. Addition of salt did not alter s, although addition of lime caused a slight increase.

Table 3 shows the values computed from filtration of various muds with varying nature and concentration of solid phase.

It will be noted that the value of s is constant for bentonite muds in all concentrations, while R' increases slightly with increasing solid concentration. This variation of R' is probably due to slight difference in the degree of dispersion, or to differences in hydration of the clay.

The s values for sample No. 1, diluted with addition of bentonite, increase as the amount of bentonite added is increased. That the increased s may be due to dilution of the original sample, rather than to the larger bentonite concentration, appears to be refuted by the constancy of s for varying amounts of bentonite in those muds composed of bentonite clay alone.

Addition of bentonite to sample No. 4 (without dilution of mud) effects a lowering of s. Apparently, the behaviors of the compressibilities of these two mud samples on addition of the colloidal bentonite are determined by the states of aggregation of the clay originally present.

Particle Size Helped

R' of both samples No. 1 and No. 4 was increased by the addition of bentonite. Here a more favorable particle-size distribution was attained after addition of bentonite, resulting in increased resistance to flow.

Data are also presented on the filtration of a mud prepared from commercial clays and sodium-silicate solution. While the R' value for this mud is high (of the order of 10^6), the low rate of filtration may be ascribed to the extremely high viscosity of the filtrate. Inasmuch as the cake permeabilities are independent of the viscosity of the liquid traversing the cake, the K values shown do not reflect the low rate of filtration of this mud.

It has been found that the filtration constants, with

TABLE 2

Effect of Chemical Treatment on Filtration

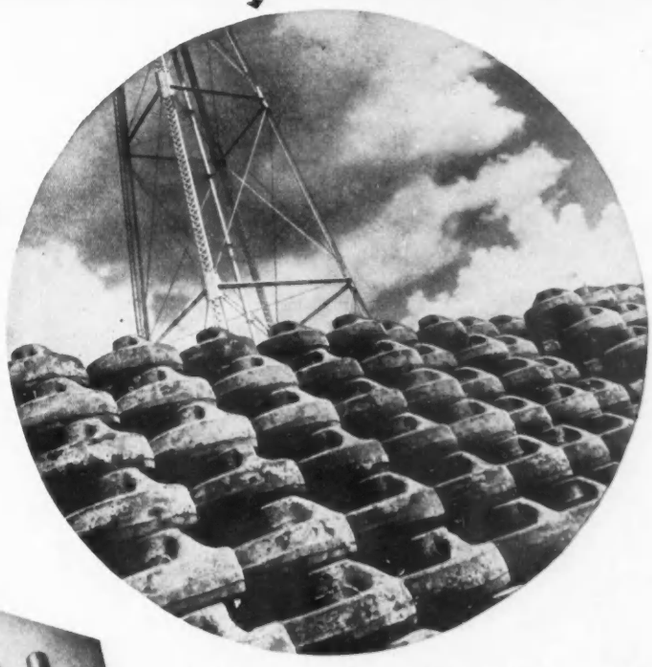
Description*	Mud Density—Hydrostatic Units	Mud Viscosity (Centipoises) at 600 R.P.M.	Temperature (Deg. C.)	p Cubic Centimeters of Sludge per Cubic Centimeter of Filtrate	s	μ Viscosity of Filtrate (Centipoises)	R'	K_2	K_4	K_8	K_{16}	K_{32}
								Permeability of Cake in Millidarcys at Pressures Indicated as Subscripts				
SAMPLE No. 1												
Untreated	50.0	11	25	0.160	0.800	0.894	9.04×10^5	6.36×10^{-4}	3.65×10^{-4}	2.10×10^{-4}	1.21×10^{-4}	6.90×10^{-5}
0.435 percent NaCl	50.0	86	25	0.160	0.800	0.894	2.80×10^5	2.05×10^{-3}	1.18×10^{-3}	6.76×10^{-4}	3.88×10^{-4}	2.24×10^{-4}
0.87 percent NaCl	50.0	108	25	0.160	0.800	0.894	2.31×10^5	2.49×10^{-3}	1.43×10^{-3}	8.36×10^{-4}	4.70×10^{-4}	2.70×10^{-4}
0.435 percent $Ca(OH)_2$	50.0	100	25	0.160	0.833	0.894	4.53×10^5	1.24×10^{-3}	7.00×10^{-4}	3.90×10^{-4}	2.21×10^{-4}	1.24×10^{-4}
0.87 percent $Ca(OH)_2$	50.0	100	25	0.160	0.900	0.894	2.40×10^5	2.22×10^{-3}	1.20×10^{-3}	6.46×10^{-4}	4.08×10^{-4}	1.86×10^{-4}
0.02 percent $Na_6(PO_3)_6$	50.0	8	25	0.160	0.800	0.894	9.60×10^5	5.99×10^{-4}	3.45×10^{-4}	1.98×10^{-4}	1.13×10^{-4}	6.50×10^{-5}
0.04 percent $Na_6(PO_3)_6$	50.0	7	25	0.160	0.800	0.894	1.08×10^6	5.31×10^{-4}	3.06×10^{-4}	1.76×10^{-4}	1.00×10^{-4}	5.78×10^{-5}
0.02 percent Na tannate	50.0	9	25	0.160	0.800	0.894	8.05×10^5	7.13×10^{-4}	4.12×10^{-4}	2.36×10^{-4}	1.35×10^{-4}	7.75×10^{-5}
0.04 percent Na tannate	50.0	8	25	0.160	0.800	0.894	1.00×10^6	5.75×10^{-4}	3.31×10^{-4}	1.90×10^{-4}	1.09×10^{-4}	6.25×10^{-5}
0.04 percent Na tannate	50.0	..	60	0.160	0.858	0.469	1.24×10^6	4.44×10^{-4}	2.46×10^{-4}	1.35×10^{-4}	7.40×10^{-5}	4.13×10^{-5}
SAMPLE No. 2												
Untreated	52.0	11	25	0.240	0.847	0.894	6.90×10^5	9.90×10^{-4}	4.50×10^{-4}	2.47×10^{-4}	1.45×10^{-4}	8.76×10^{-5}
0.084 percent NaCl	52.0	..	25	0.240	0.847	0.894	6.75×10^5	1.01×10^{-3}	4.60×10^{-4}	2.54×10^{-4}	1.47×10^{-4}	7.80×10^{-5}
0.435 percent NaCl	52.0	..	25	0.240	0.847	0.894	4.78×10^5	1.42×10^{-3}	6.50×10^{-4}	3.60×10^{-4}	2.07×10^{-4}	1.10×10^{-4}
0.04 percent $Na_6(PO_3)_6$	52.0	9	25	0.240	0.847	0.894	7.82×10^5	8.68×10^{-4}	3.97×10^{-4}	2.20×10^{-4}	1.26×10^{-4}	6.70×10^{-5}
0.04 percent Na tannate	52.0	10	25	0.240	0.847	0.894	8.56×10^5	7.97×10^{-4}	3.62×10^{-4}	2.01×10^{-4}	1.15×10^{-4}	6.13×10^{-5}
SAMPLE No. 3												
Untreated	50.0	10	25	0.163	0.810	0.894	3.31×10^5	1.71×10^{-3}	9.90×10^{-4}	5.62×10^{-4}	3.20×10^{-4}	1.83×10^{-4}
0.04 percent Na tannate	50.0	8	25	0.163	0.810	0.894	4.86×10^5	1.18×10^{-3}	6.71×10^{-4}	3.83×10^{-4}	2.18×10^{-4}	1.23×10^{-4}

* Percentages of addition agents refer to weight percent on basis of total mud weight.

WELLS THAT DON'T BLOWOUT
COLLARS THAT DON'T STRIP
VALVES THAT DON'T SCORE

NICKEL ALLOY STEELS

In many West Texas wells, a new, controlled pressure method of drilling-in has replaced the old column of mud. Oil, oil with gas, or even gas alone, can be used as a circulating column, safely controlled by a drilling head such as this Type D developed by the Guiberson Corp., Dallas, which is pictured above. Designed for working pressures of 1,500 lbs. each head is tested hydrostatically to 3000 lbs. To assure continued pressure-tightness, strength and toughness, these drill head housings are cast from a Nickel-chromium steel similar to SAE 3135.



Abrasive sand and shale in drilling mud fail to score these valve seats (above) forged for the Mission Manufacturing Co., Houston, from Nickel-chromium steel (SAE 3140), heat-treated to a Brinell hardness of 241-269, with a tensile strength of around 120,000 p.s.i. For forgings that last, specify Nickel alloy steels.

"Strongest, toughest and hardest drill collars made," says Bridgeport Machine Co., Wichita. These collars are forged from Nickel-chromium steel (SAE3140), heat-treated and oil quenched. Uniform structure is obtained and a Brinell hardness of 275-310. Tensile strength of 125,000 to 148,000 with good ductility. Drilling wells to deepest levels demands high strength Nickel alloy steels.

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TABLE 3

Effect of Variation of Nature and Concentration of Colloidal Material on Filtration of Muds

Description*	Mud Density—Hydrostatic Units	Mud Viscosity (Centipoises) at 600 R. P. M.	Temperature (Deg. C.)	v Cubic Centimeters of Sludge per Cubic Centimeter of Filtrate	μ Viscosity of Filtrate (Centipoises)	s	R'	K_2	K_4	K_8	K_{16}	K_{32}
								Permeability of Cake in Millidarcys at Pressures Indicated as Subscripts				
Mud No. 1.....	50.0	11	25	0.160	0.894	0.800	9.04×10^{5}	6.36×10^{-4}	3.65×10^{-4}	2.10×10^{-4}	1.21×10^{-4}	6.90×10^{-5}
Mud No. 1 diluted to 2 times volume and 2 percent bentonite.....	44.2	8	25	0.082	0.894	0.818	2.10×10^{6}	2.70×10^{-4}	1.53×10^{-4}	8.70×10^{-5}	4.93×10^{-5}	2.80×10^{-5}
Mud No. 1 diluted to 4 times volume and 4 percent bentonite.....	44.2	8	25	0.066	0.894	0.833	4.02×10^{6}	1.39×10^{-4}	7.81×10^{-5}	4.38×10^{-5}	2.48×10^{-5}	1.40×10^{-5}
6.5 percent bentonite	44.8	15	25	0.055	0.894	0.778	5.50×10^{6}	1.06×10^{-4}	6.17×10^{-5}	3.60×10^{-5}	2.09×10^{-5}	1.39×10^{-5}
6.0 percent bentonite	44.8	14	25	0.052	0.894	0.778	5.40×10^{6}	1.07×10^{-4}	6.24×10^{-5}	3.64×10^{-5}	2.12×10^{-5}	1.39×10^{-5}
5.0 percent bentonite	44.5	9	25	0.043	0.894	0.778	5.34×10^{6}	1.09×10^{-4}	6.37×10^{-5}	3.70×10^{-5}	2.16×10^{-5}	1.40×10^{-5}
4.0 percent bentonite	44.1	3	25	0.033	0.894	0.778	4.25×10^{6}	1.37×10^{-4}	8.00×10^{-5}	4.65×10^{-5}	2.72×10^{-5}	1.74×10^{-5}
3.0 percent bentonite	43.7	2	25	0.023	0.894	0.778	3.92×10^{6}	1.49×10^{-4}	8.70×10^{-5}	5.04×10^{-5}	2.94×10^{-5}	1.87×10^{-5}
Mud No. 4.....	49.0	8	25	0.143	0.894	0.858	6.62×10^{5}	8.26×10^{-4}	4.53×10^{-4}	2.48×10^{-4}	1.48×10^{-4}	7.40×10^{-5}
Mud No. 4 and 1 percent bentonite.	....	11	25	0.151	0.894	0.833	1.18×10^{6}	4.76×10^{-4}	2.67×10^{-4}	1.50×10^{-4}	8.47×10^{-5}	4.76×10^{-5}
Mud No. 4 and 2 percent bentonite.	....	26	25	0.160	0.894	0.800	1.51×10^{6}	3.80×10^{-4}	2.19×10^{-4}	1.25×10^{-4}	7.14×10^{-5}	4.13×10^{-5}
Silicate mud.....	....	42	25	0.127	19.1	0.770	8.60×10^{6}	6.80×10^{-5}	4.00×10^{-5}	2.34×10^{-5}	1.37×10^{-5}	8.06×10^{-6}

* Percentages refer to weight percent on basis of total mud weight.

the possible exception of $\rho' f(P)$ obtained on runs employing filter paper as the filtering medium are applicable to filtration against sand or similar media. Inasmuch as the values of the constants involved in m are determined only by conditions obtaining within the cake, it follows that these values should be independent of the nature of the filtering medium. c, involving $\rho' f(P)$, which is dependent on the amount and nature of the sludge which penetrates a short distance into the filtering medium as well as on the nature of the medium itself, will be seen to vary as the medium is varied. As pointed out previously, however, m is the determining factor of filtration for extended duration of time.

The effect of fibrous materials ordinarily employed in field practice to prevent loss of circulation has been found to be slightly deleterious in the filtration of Gulf Coast muds against media of permeabilities comparable to that of filter paper and sand cores employed (of the order of 0.5 to 1.0 darcy). It is not to be inferred from this, however, that the use of fibrous materials is without value in field operations.

Conclusions

The filtration of mud is determined primarily by the amount and nature of solids present; addition of weighting materials ordinarily increases the rate of filtration. Factors influencing the filtration rate are degree of dispersion of solid, distribution of particle sizes, degree of hydration, and presence of dispersing or agglomerating agents. In general, preponderance of highly-hydrated colloidal material, with a wide range of particle sizes, and presence of a dispersing agent are conducive to the lowest rate of filtration.

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Sparta Has Possibilities in Pointe Coupee Parish

By JOHN D. TODD and FRANK C. ROPER,
Consulting Geologists

DISCOVERY of Sparta formation production in the Louisiana Gulf Coast area during 1937, has changed the complexion of the district, including the outlook of Ponte Coupee Parish. Although the latter to date is lacking in commercial production, it is receiving attention today, and indications are that it has possibilities of producing oil.

Pointe Coupee Parish is located in Central Louisiana on the eastern side of the state, where it forms the western bank of the Mississippi River. It lies at the head of the Atchafalaya Basin, and is comprised of both marshes and uplands. It lies in Townships 1 to 6s and Ranges 7 to 11e. It is situated directly east of Continental Oil Company's new and prolific field at Ville Platte, and therefore is the very center of the now active "Louisiana Sparta Trend."

History

There has never been any commercial production of oil in Pointe Coupee Parish, and this very fact imposes a great psychological burden on the area in oil circles. The result has been that, in the past, interest in the area has always been slight and prices have been very low.

As the Conroe trend play swept eastward in the early 30's, Pointe Coupee did come in for some consideration and there was some scattered buying at nominal prices. However, the drilling of Louisiana Cockfield prospects met with such dismal results, that the enthusiasm generated by Conroe and Tomball soon was dissipated. The result being that never-respected Pointe Coupee Parish did not come in for any development.

At various times larger concerns continued to do sporadic geophysical work in the parish. The results of these reconaissance surveys were not then considered encouraging, and did not lead to leasing or development programs.

Development

Early efforts of independents to take blocks and do geophysical work in Pointe Coupee Parish were directed wisely, but were not well enough financed to persist to fruition. Although some gravity anomolies were located and structures partially outlined by reflection seismograph, still none of the companies could be interested in continuing the pioneering work in the parish.

Those who played Pointe Coupee Parish in 1935 and 1936 have learned that it is just as fatal for the small operator to be in an area too early as it is to be there too late.

The discovery of Sparta production at Ville Platte by Continental Oil Company in 1937 changed the entire complexion of this part of Louisiana. With a known producing horizon carrying from 60 to 75 feet of highly saturated oil sand available, the search for structures in that area became much more attractive.

Both majors and independents immediately directed more of their geophysical efforts into the Sparta Trend, and many large blocks of acreage were taken under geophysical option both east and west of Ville Platte. As Pointe Coupee Parish lies in the eastward projection of this trend, it again came in for some consideration.

In the summer of 1936 J. P. Scranton and his associates (in part consisting of the same personnel that had been associated with him in the discovery of the Jeanerette and Charenton oil fields) decided to undertake an extensive exploration and development program in Pointe Coupee Parish.

Reconaissance work was done with torsion balances. At least 7 gravity prospects were defined, in about the same areas where previous major company work had indicated the existance of anomolies. Exploration lease blocks were taken around these anomolies, and continuous profile reflection seismograph surveys were made of each.

One of these blocks centered in the western part of Setcion 28-3s-8e, largely on the lands of Hackney Lumber Company. While this prospect was of inferior geophysical merit, the terms of the lease from Hackney Lumber Company made drilling imperative. While the strike of the deeper formations was not

definitely known in this area, this prospect was considered to be about on strike with Ville Platte.

This well, carried in the name of Batchelor Oil Company's Hackney Lumber Company 1, was drilled "tight" but was closely scouted by all the companies. The well had several gas and distillate shows, which proved unproductive on drill stem tests. The absence of shows at lower levels indicates the likelihood of a fault, however the presence of any shows on a structure of such low relief was a matter of general surprise.

The Batchelor well had nice sections of sand at upper levels, had a poor Cockfield section, but had 20 feet of Sparta sand. This Sparta sand showed good porosity, and under microscope closely resembled specimens from Spurger and Ville Platte. The fact that the Sparta sand at Batchelor was only 20 feet, as compared with 60 to 75 feet at Ville Platte, might be due to the absence of structure but is probably due to the well being located too far down dip. A thicker sand section and greater porosity, in such a continental sediment, would be expected up-dip.

The Batchelor well was carried to a depth of 9893 feet, and was the first truly deep test ever drilled in the parish. This test proved the definite existence of the Sparta and Cane River (equivalent of Texas Weches) formations in the area, and provided considerable geological data of interest.

Other prospects of greater geophysical merit will be drilled in the future, and some of those that have shown more closure should prove productive.

Prognosis

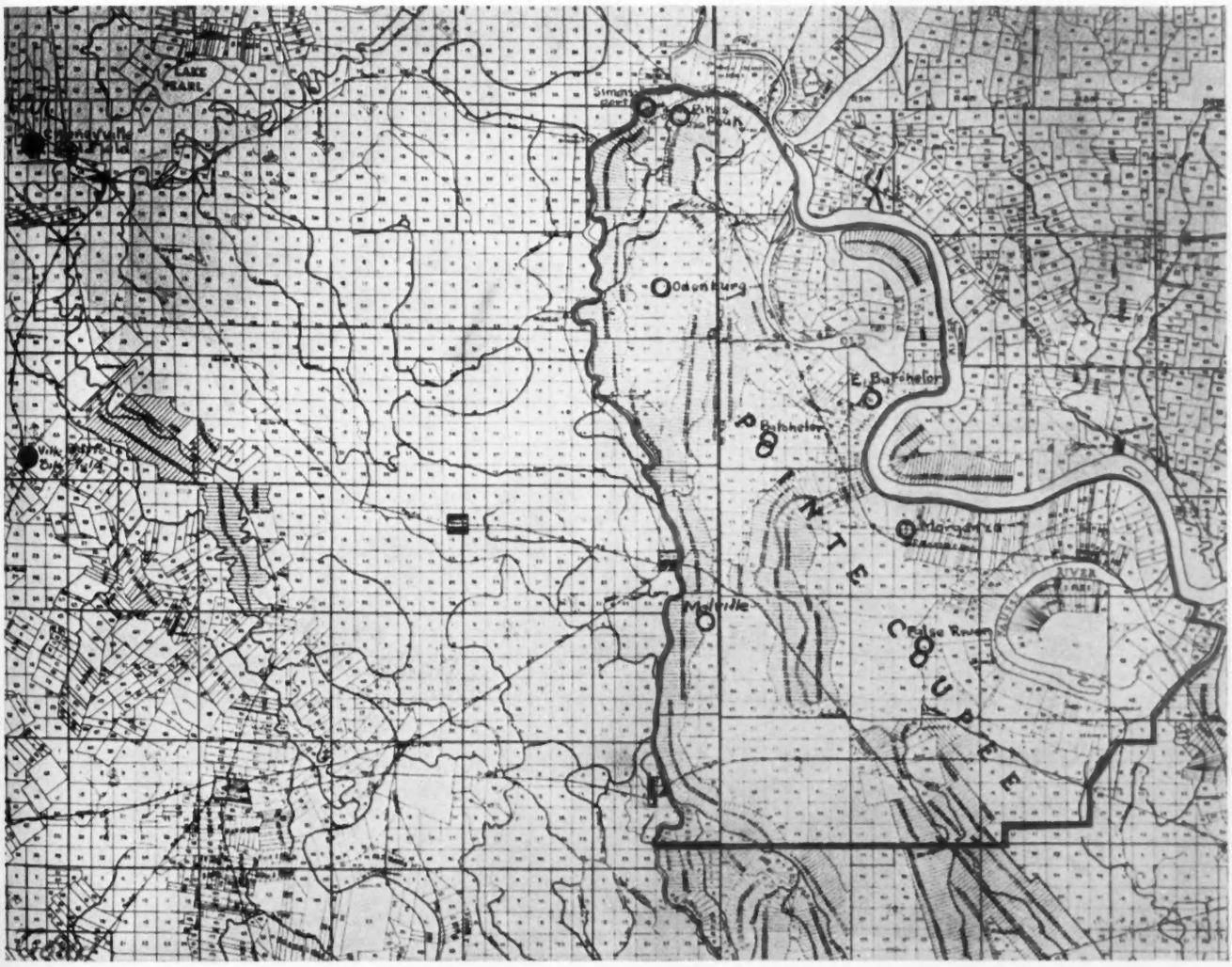
A sizeable number of buyers have been attracted to Pointe Coupee Parish by Scranton's activity there.

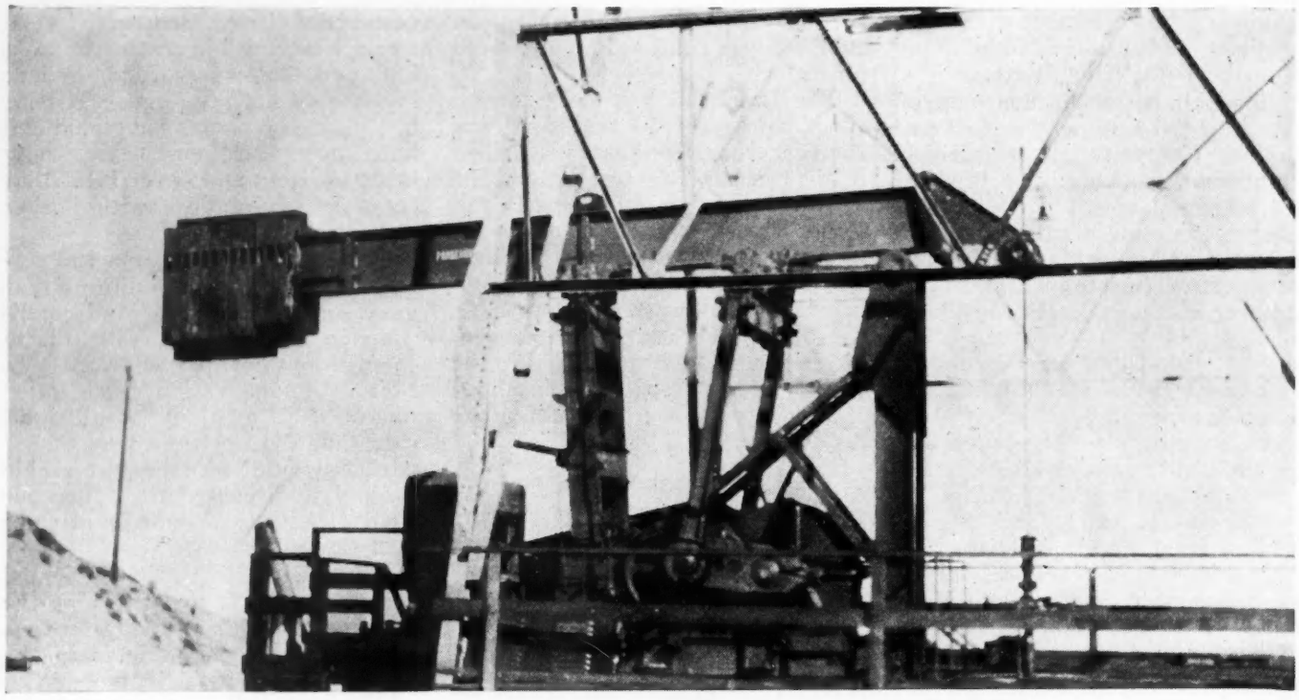
The general broader interest in the Parish has been evidenced by the recent buying of such concerns as Humble, Texas, Gulf, Stanolind, Kirby, Cities Service, Mills Bennett and O'Brien Brothers. Every week sees new buyers in the area and new leases recorded. Where royalties went begging at $4 base last year, companies have paid $70 base this year; and leases now bring prices and overrides that compare favorably with other coastal areas.

There is no known geological reason why the same conditions that gave some of the best sand conditions in Louisiana at Ville Platte should not continue eastward into Pointe Coupee Parish. Such information as is available would indicate that the northern part of the parish would be the preferable ground for prospecting, because sand conditions should be at their best there.

Geophysical work has indicated the presence of structures in the parish that compare favorably with the other producing fields in the Sparta trend. The belief is well and widely held in geological circles that several large recovery Sparta fields should be found in Pointe Coupee Parish.

Pointe Coupee Parish oil development.





Kettleman Hills . . .

By BRAD MILLS

OIL lifting problems at Kettleman Hills are increasing as the formation pressure declines, water encroaches, and the fluid level subsides. The tight nature of the principal oil zone, depth of production, and added cost with artificial lifts have combined to place the field in a weaker position than is generally known.

During the first three years of development, a record flowing life was indicated for the average completion. Intensive drilling in two sectors, and overproduction of group and offset wells quickly reduced the formation pressure and changed the field picture considerably ahead of schedule.

The Temblor zone is a tight, closely-cemented formation that probably will not give up its oil uniformly or readily under low pressures. The ultimate yield of oil from the Temblor proper will not exceed 60 to 70 percent of the total indicated by average original estimates. The field for some time has been showing definite effects of a production period that has reduced pressures to a dangerous point in three areas, encouraged the encroachment of water, and reduced the helpful action of the gas cap.

Failure of the North Dome to stand up under the heavy withdrawals of the past seven years has not eliminated the field as a major factor, but simply reflects the vulnerability of the producing formation. The original bottom-hole pressure in inside wells was not recorded, but it probably was above 3000 pounds. The maximum

A typical Kettleman Hills North Dome compressor plant, which supplies gas for gas-lift wells.

This heavy pumping unit successfully handled a tapered sucker rod string 7600 feet long while lifting 300 barrels of fluid daily.

bottom-hole pressure in inside wells located in the most productive areas is little more than half the original pressure, and in the weakest wells it is considerably lower. The pressure drop during the past two years has been sharp in the heavily produced sections.

Gas has been an important producing force at Kettleman Hills. The amount of gas already produced is equal to eight times the oil produced, when reservoir displacement is considered. The North Dome has been depleted and damaged much more by the production of gas than of oil.

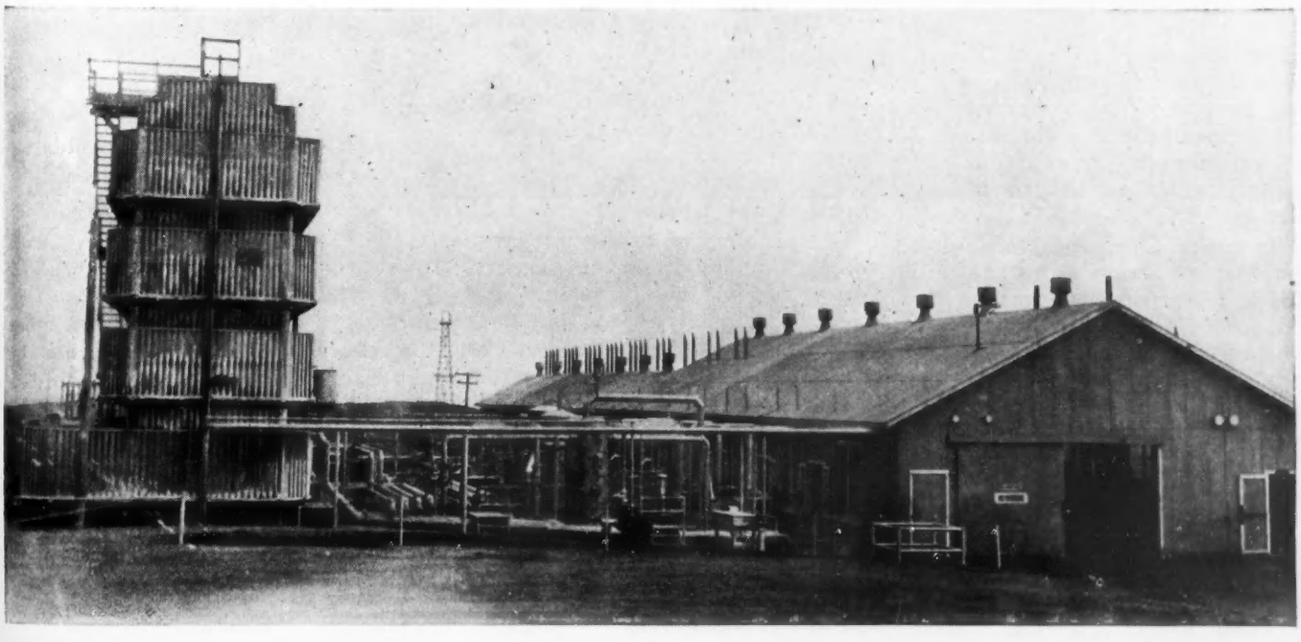
The lifting problem has been aggravated by production and drilling practices that principally attempted to obtain a high rate of flow. Water tends to prevent oil from entering the hole in many wells. Water ordinarily encroaches faster in a gas sand than in an oil sand, however. Expansion of the gas bubble at Kettleman Hills has met the encroaching water in some areas, and this water travels fast through a sand formerly dominated by gas under a pressure that was a favorable force in the production of oil.

The principal producing formation consists of five zones, although it originally was regarded as one zone. The production of from two to four of these zones in each well has brought in water through at least one troublesome stratum. The inclusion of excess formation has led to a serious lifting problem in two sections of the field, and numerous attempts to shut off the troublesome levels have been made.

Of the 200 producing wells in the field, exactly half are on artificial lifts of various types. Much experimental work is now under way on the North Dome, and sev-

a Lifting Problem

Associate Editor



eral lifting methods are being tried and compared. It also has been possible to compare similar methods in wells producing from different fluid levels, and yielding different water cuts.

Various gas-lift installations have been popular and effective, and it has been indicated that lifting oil by this method to surprisingly low fluid levels will be possible. Gas-lift installations as ordinarily used on the North Dome show a comparatively high cost, while the number of wells the average gas-lift plant can handle is limited. The loss of injection gas to the formation has occurred in a few wells, and when this has become excessive, some other method has been tried. Despite its shortcomings, gas lift has done much to keep the weak wells in the profitable column, and it should be classed as a generally successful means of producing a large part of the daily output.

Tubing has been lowered from the 6600-foot level to a point near bottom in various gas-lift wells to give a steadier flowing action. The average Kettleman Hills well is 8000 feet deep, and a tremendous force of some kind will be required to lift oil from a point near bottom in low fluid level producers. The formation pressure is still the chief driving force in the production of oil, although it alone does not give a natural flowing action in fully half of the producing wells.

Various Types of Lifts

Operators have been attempting to classify producing wells, but the plan of attack on lifting problems is far from organized. Gas lifts of various types, submersible pumps, ordinary rod and beam pumps, and modified forms of each type have been considered and tried. Some of the so-called "fancy" lifts and pumps have given surprisingly good results in a few wells.

The entire lifting problem is an open one, but it now looks as if the field will be produced artificially as other fields in California have been produced—with lifts of many types. Production is considered deep, but the operator's perspective has changed with regard to mental hazards that a few years ago prevented successful pumping and lifting operations. The 6000- and 7000-foot fluid levels are no longer positive production barriers.

The average engineer believes it possible to pump the ordinary Kettleman Hills well with sucker rod pumps. Where wells produce clean oil or very little water, the amount of fluid to be hand'ed ordinarily will not be over 200 to 300 barrels daily. It already has been demonstrated that wells can be pumped successfully as low as 7500 feet and produce this quantity of fluid. Where wells produce a high percentage of water, the pumps will not need to be set so low because of the higher fluid level. The latter condition will permit lifting a greater quantity of fluid, since the rod stretch on wells tubed to 5000 or 6000 feet will be much less than at lower depths. Many wells at Kettleman Hills will not differ radically from those at Santa Fe Springs or Long Beach.

Heavy Pumping Unit

A major operator at Kettleman Hills has been using and experimenting with an ordinary rod pump, and results have been interesting. The surface pumping unit is the heaviest type offered by a large manufacturer. Three-inch tubing has been used, and this size seems best adapted to wells equipped to pump with sucker rods and large surface units. The tapered sucker rod string includes 1-inch rods on top, ⅞-inch rods in the middle, and ¾-inch rods on bottom. An insert liner type pump has been used during the trial period. The pump was set at 7600 feet and handled up to 300 barrels of fluid daily, of which a small percentage was water. The pump has been operated at 11 strokes per minute, and the stroke length has been 11 feet. Results clearly indicate that it will be possible to use rod pumps in wells having a favorable fluid level. This company has made no effort to determine the percentage of stroke lost between the surface and the pump, but will attempt to do so in future experimental work.

The problem of producing large volumes of oil with sucker rod pumps is not one of sucker rod strength alone. Strong enough sucker rods can be made, but the present thought in some quarters is that their couplings will be so large as to impede the flow of oil past them in the tubing. The question as to the feasibility of using larger tubing arises. In many of the wells in line for pumping, tubing large enough to accomodate the sucker rod boxes requires upset collars of such large diameter as to be dangerous in the relatively small oil strings now in use. The pumping of oil from the average well is not simply a question of the energy or power required, but rather one of pulling power to the oil at the bottom of the hole, and the bringing of the oil to the surface with a minimum of friction.

Kettleman Hills operators have been able to judge their problems by those in other deep pumping fields, although identical problems do not exist. There are about 25 wells in California pumping from greater depths than 7000 feet, and this number will increase steadily as natural flow ceases. Some of the very deep pumping wells at Santa Fe Springs have been returning a profit for several years.

Various rodless, submersible, and semi-gas lift pumps are being used in representative wells, and all are meeting with at least a fair measure of success. One hydraulic type pump has been operating for almost two years, and is now lifting about 500 barrels of fluid daily. A submersible pump of the motor-driven type has been operating satisfactorily for several months. Pumps of this type ordinarily require large oil strings for profitable operation.

Pumping unit manufacturers have been attempting to develop extra heavy surface equipment for very deep wells, and it is interesting to note that such a trend applies to both sucker rod and rodless pumps. Small pumps capable of handling from 30 to 50 barrels daily will not be popular at Kettleman Hills, since the number of producing wells will be far less than the total in other major fields of large area.

Problem to Increase

The deep well lifting problem might be classed as threatening, but not so acute as it will become in the next two years.

A well repairing program at Kettleman Hills might do much to simplify the lifting problem, but the average producer is difficult to repair. Squeeze cementing holds considerable promise, however, and it will be possible to reduce the water content in many wells. The cost of well repairs has been very high per job, and no other California field offers more problems along this phase of operations.

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Well-Depth Measurements

By C. E. REISTLE, JR. and S. T. SIKES, JR.,
Humble Oil & Refining Company, Houston, Texas

PART 2

THE first installment of "Well-Depth Measurements," a paper which was presented in full before the May 25 meeting of the American Petroleum Institute in Wichita, Kansas, went into the history of the investigation of measuring practices and errors, the problems of well-depth measurements, present practices, errors and their correction, and errors in measurement of tubular goods.

Part 2, published herewith, starts off with determination of the stretch for a mixed string of tubular goods and continues the discussion of various errors in measurement and their correction.

PIPE suspended from elevators stretches, due to its own weight, as shown for a uniform string in Figure 3. If pipe is measured standing in the derrick or lying on the pipe rack, a systematic error equal to that stretch is introduced. Although most references use a modulus of elasticity of 30,000,000 pounds per square inch, a variation from 29,000,000 to 31,000,000 pounds per square inch is considered probable.

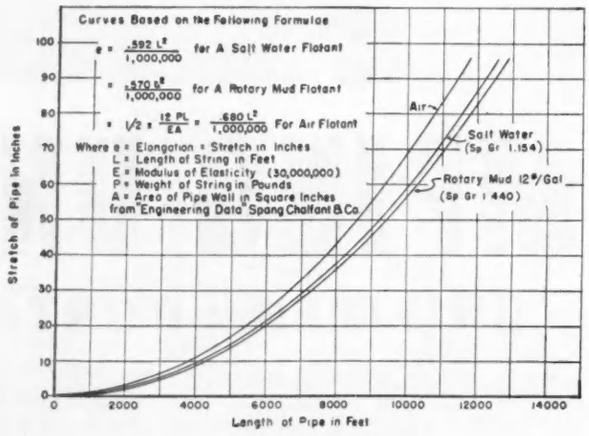


FIGURE 3
Stretch of Casing, Tubing, or Drill Pipe Suspended Freely in Various Flotants without Float Plug.
Note: These curves are for uniform strings

The following derivation was developed for determining the stretch in a mixed string:

Let:

e = elongation, in.
L = length of string, ft.
E = modulus of elasticity = 30,000,000 lb. per sq. in.
P = weight of string, lb.
A = area of pipe wall, sq. in.
w = weight per foot of pipe, lb.
P_1 = weight of L_1 ft. of pipe weighing w_1 lb. per ft. on bottom section of drill string.
P_2 = weight of L_2 ft. of pipe weighing w_2 lb. per ft. on upper section of drill string.

The total elongation, *e*, equals elongation of lower section due to its own weight, plus elongation of upper section due to its own weight, plus elongation of upper section due to the weight of lower section.

Then:

$$e = \frac{6P_1L_1}{EA_1} + \frac{6P_2L_2}{EA_2} + \frac{12P_1L_2}{EA_2}$$

$$e = e_1 + e_2 + 2\frac{P_1}{P_2}e_2$$

Where: e_1 and e_2 can be read from Figure 3 corresponding to length of section L_1 and L_2, and P_1 and P_2 can be easily calculated from w_1, w_2, L_1, and L_2.

To illustrate the effect of the added stretch due to

a heavy section on bottom, the following tabulation is submitted:

Depth (Feet)	Stretch for Uniform String (Inches)	STRETCH FOR MIXED STRINGS	
		Casing (Top Half of String 10 Percent Lighter Than Lower Half) (Inches)	Drill Pipe 4½-In. x 16.6-Lb. (18.4-Lb. with Tool Joints) with 200 Ft. of 144-Lb. Drill Collars on Bottom (Inches)
5,000.....	14	15	21
10,000.....	57	59	71
13,000.....	97	101	117

Instead of correcting for stretch as described, the pipe can be measured in tension hanging in the elevator—either by measuring from the bottom of the elevator to the top of the next joint, adding the distance from the bottom of the elevator to the top of the tool-joint box, or by using a bracket (Figure 6) to pass around the elevator.

Figure 7 shows typical sub-surface temperatures of producing wells in 48 fields plotted against the sub-sea depth at which these temperatures were observed. It has been found that, if the points representing fields producing from the same sand (such as the Frio or the Cockfield sands of Texas) were connected, they would lie on practically a straight line. However, temperatures encountered in normal drilling operations are considerably lower than those in the accompanying chart, due to the cooling effect of the drilling fluid as it is circulated. Inasmuch as the difference between the average temperature of the drilling fluid and the known sub-surface temperature in a given field varies with many factors, including the items influencing the rate of fluid circulation, or the length of time since circulation was stopped, it is not practical to estimate average fluid temperatures for the correction of well-depth measurements.

Figure 8 shows the amount of expansion in steel due to a rise in temperature over that at which the metal is measured. From these curves it is seen that, at greater depths and temperature, the elongation is considerable—amounting to 2.7 feet at a depth of 10,000 feet, with a temperature differential of 40°F.

Inasmuch as the coefficient of thermal expansion is

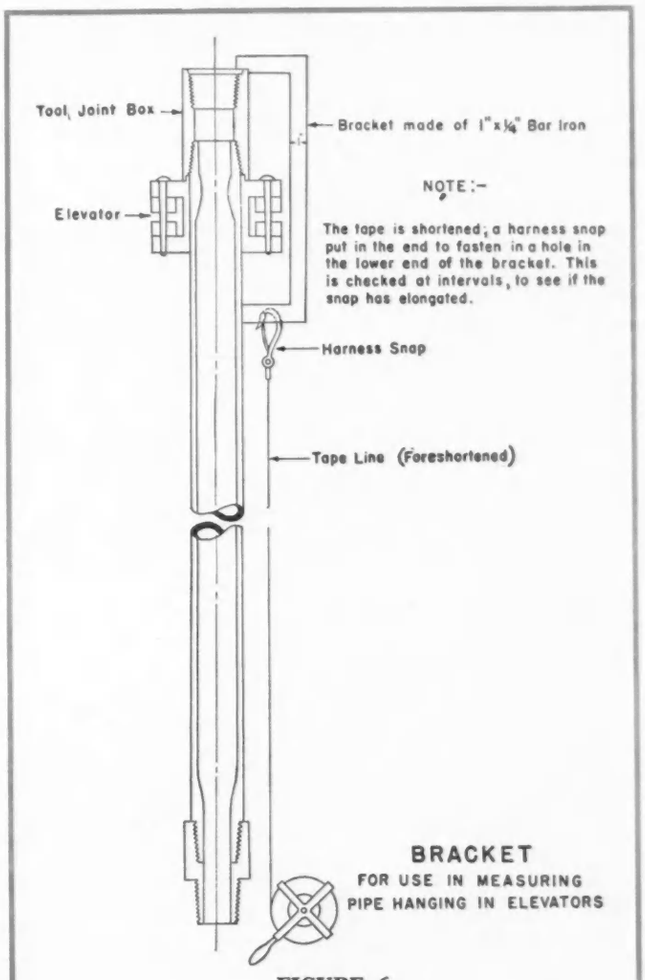

Tool Joint Box
Bracket made of 1"x¼" Bar Iron
NOTE:-
Elevator
The tape is shortened; a harness snap put in the end to fasten in a hole in the lower end of the bracket. This is checked at intervals, to see if the snap has elongated.
Harness Snap
Tape Line (Foreshortened)
BRACKET
FOR USE IN MEASURING
PIPE HANGING IN ELEVATORS

FIGURE 6

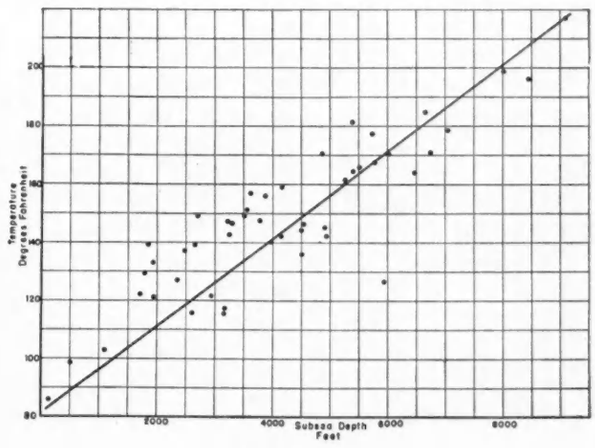


FIGURE 7

Sub-surface Temperature vs. Sub-sea Depth
Representing average bottom-hole temperatures for various fields.

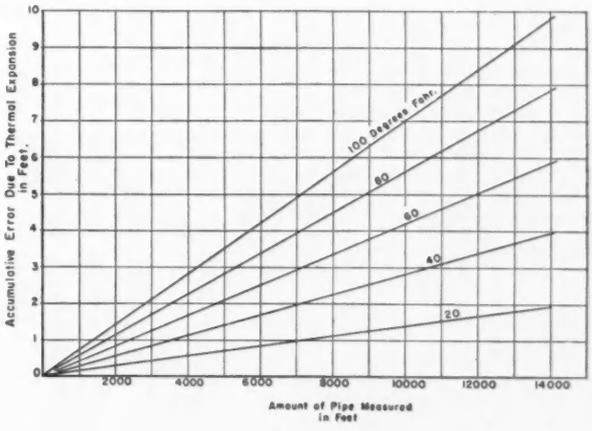


FIGURE 8

Elongation Due to Thermal Expansion
Showing error caused by pipe being at higher temperature than measuring tape.

the same for drill pipe, casing, tubing, and steel measuring lines, elongation due to temperature difference may be neglected if a comparative rather than an absolute depth is sufficient. In order to have the pipe and tape at approximately the same temperatures, pipe should be measured when going into the hole, rather than while coming out, or else sufficient time should be allowed for proper cooling before measuring.

If a thribble of pipe is measured standing in the derrick, there generally is a sag or bowing of the pipe due to its own weight. Also, even if the pipe is rigid enough to support its own weight without sagging, wind might cause the measuring tape to bow. The systematic errors arising from such conditions may be calculated as follows:

Assuming bowed portion is a catenary[5]:

Let:

x = 45 ft. = ½ length of stand.
y = greatest distance between curved tape and straight pipe (or vice versa).
z = auxiliary variable.
s = corrected length of catenary.

Then:

y (Feet)	$\frac{v}{x}$	z	$a=\frac{x}{z}$	sinh z	s = a sinh z	Error in: 45 ft. (Feet)	Error in: 10,000 Ft. (Feet)
3	0.06667	0.1332	337.84	0.1336	45.13	0.13	28
2	0.0444	0.0888	506.30	0.08898	45.05	0.05	11
1	0.02222	0.04444	1,012.6	0.04444	45.02	0.02	4
0.5	By extrapolation						2
0.25	By extrapolation						1

The above errors due to sag are eliminated by pulling on the tape until the tape conforms to the line of the drill pipe.

In addition to the bowing of the tape due to wind pressure, there is another tendency of the tape to form a catenary, due to pipe standing in the derrick being racked at an angle averaging a little over 4° from vertical.

For a tape unsupported except at the two ends[6]:

Let:

$$wa=\frac{0.017(90)}{10}=0.153$$

Where:

w=weight per foot of tape, lb.
a=length of tape, ft.
Q=pull on tape, lb.
k=auxiliary variable.

Then, for an angle 4 deg. from vertical:

k=0.00012
L=a (1—k)

Or in 10,000 ft:

error=0.12 ft.

Error Due to Pipe Leaning in Derrick

Pull on Tape at Bottom Q (Pounds)	$\frac{wa}{Q}$	k	Error in 10,000-Ft. Hole (Feet)
15	0.102	0.000006	0.06
10	0.153	0.000012	0.12
7.5	0.204	0.000024	0.24

If a single stand of pipe were hung from the elevators, and a steel tape hooked over the upper end of the tool-joint box with the lower end hanging free, using a special tool (Figure 6) on the upper end to measure around the elevator without distorting the tape reading, then the tape should give a correct measurement, inasmuch as for both pipe and tape the distortion is proportional to the length hanging free. However, if a pull is taken on the lower end of the tape, the tape will be stretched:

$$E=\frac{S}{d}=\frac{\frac{P}{a}}{\frac{e}{L}}$$

Where:

P=pull, lb.
a=cross-sectional area of line, sq. in.
S=stress, lb. per sq. in.
e=total elongation due to *P*, ft.
L=length of tape in extra tension *P*, ft.

$$d=\text{strain}=\frac{e}{L}.$$

E=modulus of elasticity=30,000,000 lb. per sq. in. for steel.

Or:

$$e=\frac{\frac{P}{a}}{\frac{E}{L}}=\frac{PL}{Ea}$$

For a 0.25-in. x 0.020-in. or 0.50-in. x 0.010-in. tape:

$$e=\frac{90P}{30{,}000{,}000(0.25)(0.020)}=0.0006 \text{ ft. per lb. of pull per 90-ft. stand.}$$

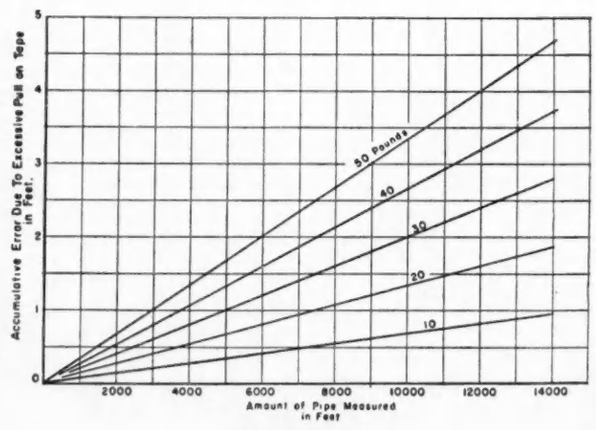
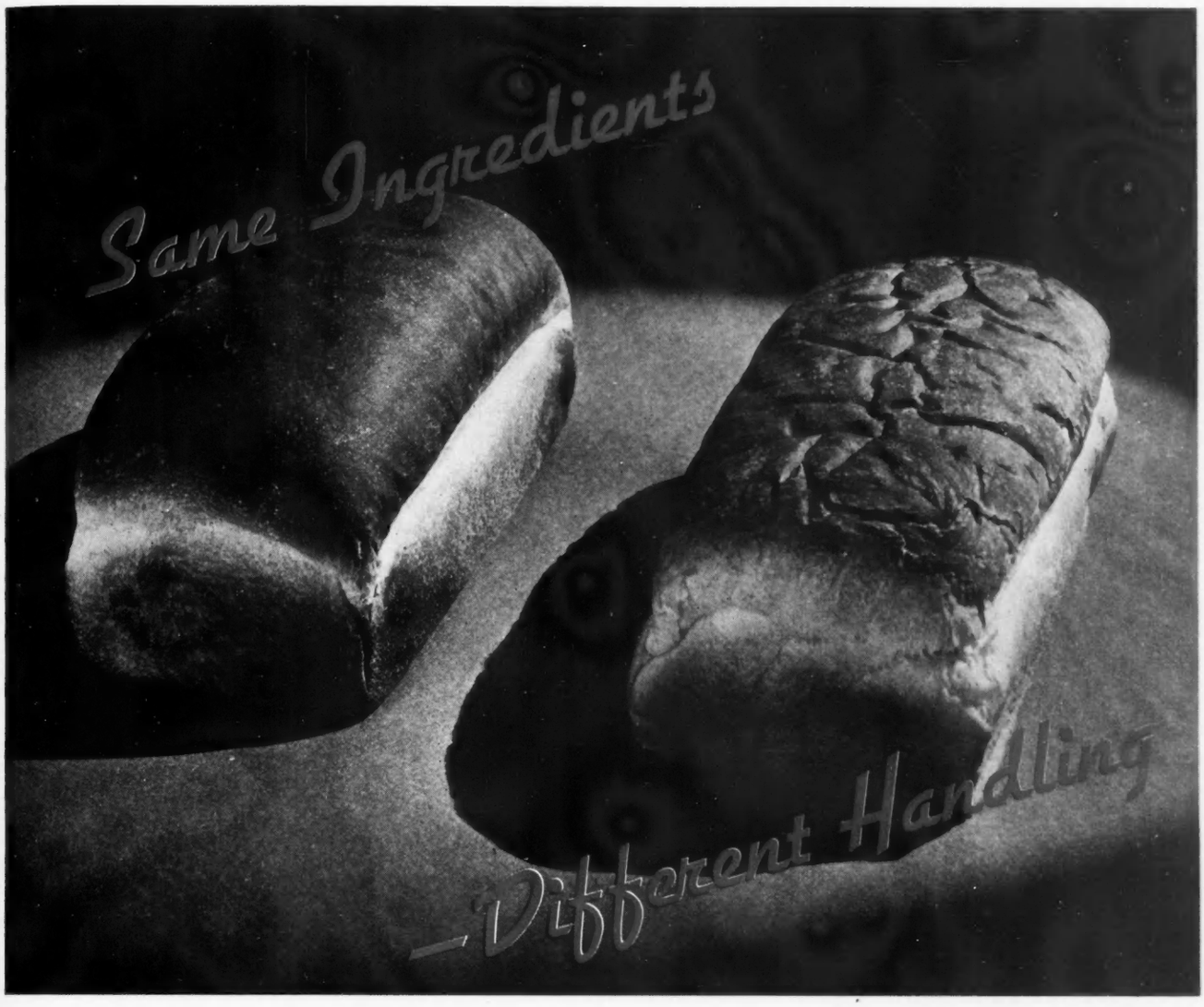


FIGURE 9
Error Due to Excessive Pull on Tape
0.25 inch x 0.020 inch or 0.50 inch x 0.010 inch steel derrick tape.



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The curves in Figure 9 were obtained from the above formula. At 10,000 feet, the accumulative error introduced would amount to 1.35 feet with a pull of 20 pounds.

To determine the pull exerted, a field test was made using a tape spring balance, hooked at any desired point on the tape by means of a tape clamp. With pipe racked in the derrick, the pull varied from 10 to 20 pounds. The wind velocity during this test was estimated at 10 miles per hour. The errors to be expected from pull on the chain will, therefore, be a factor in measuring pipe standing in the derrick.

When measuring pipe lying horizontally on the pipe rack, a pull of only 1 to 2 pounds was noted. As

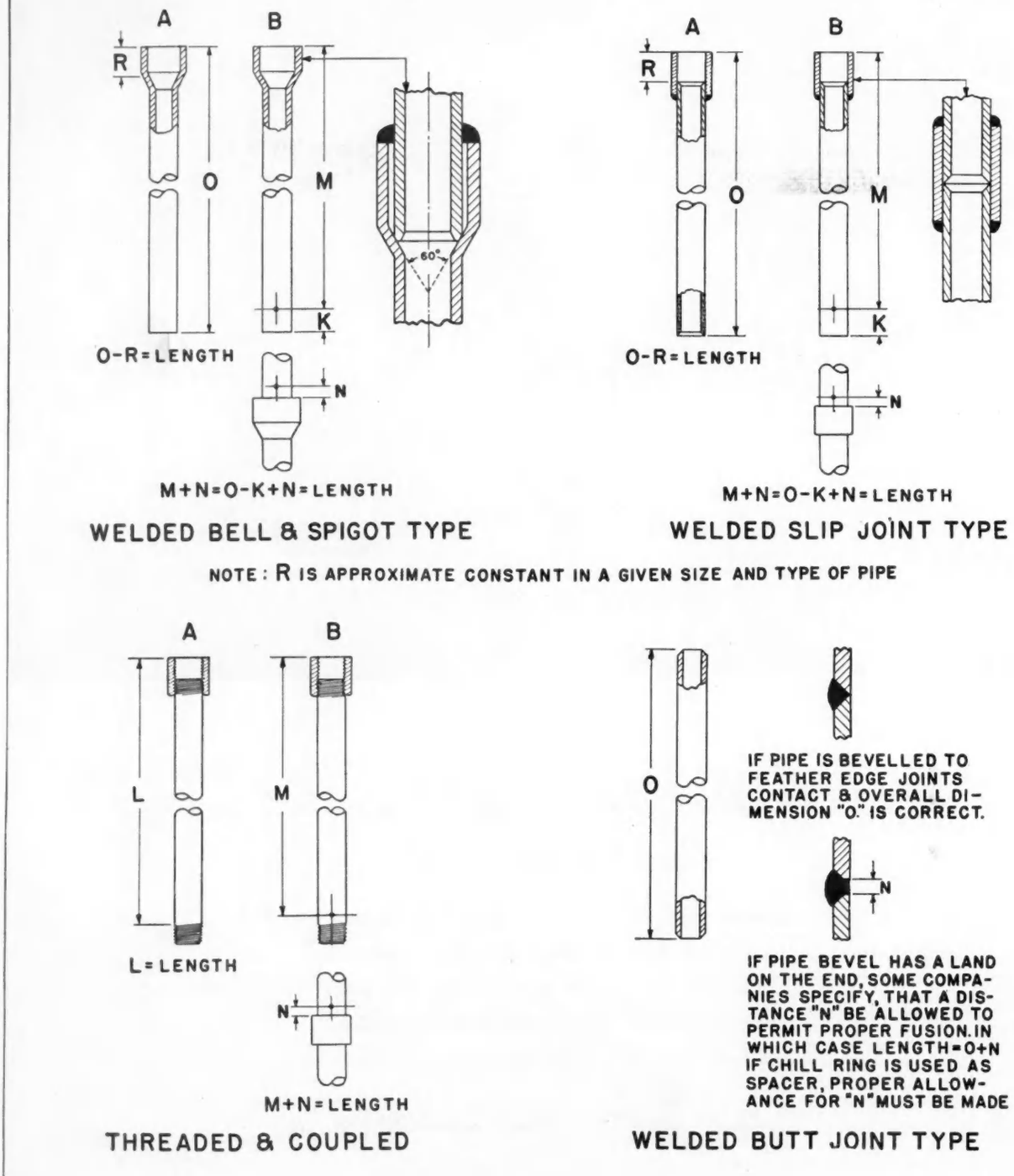
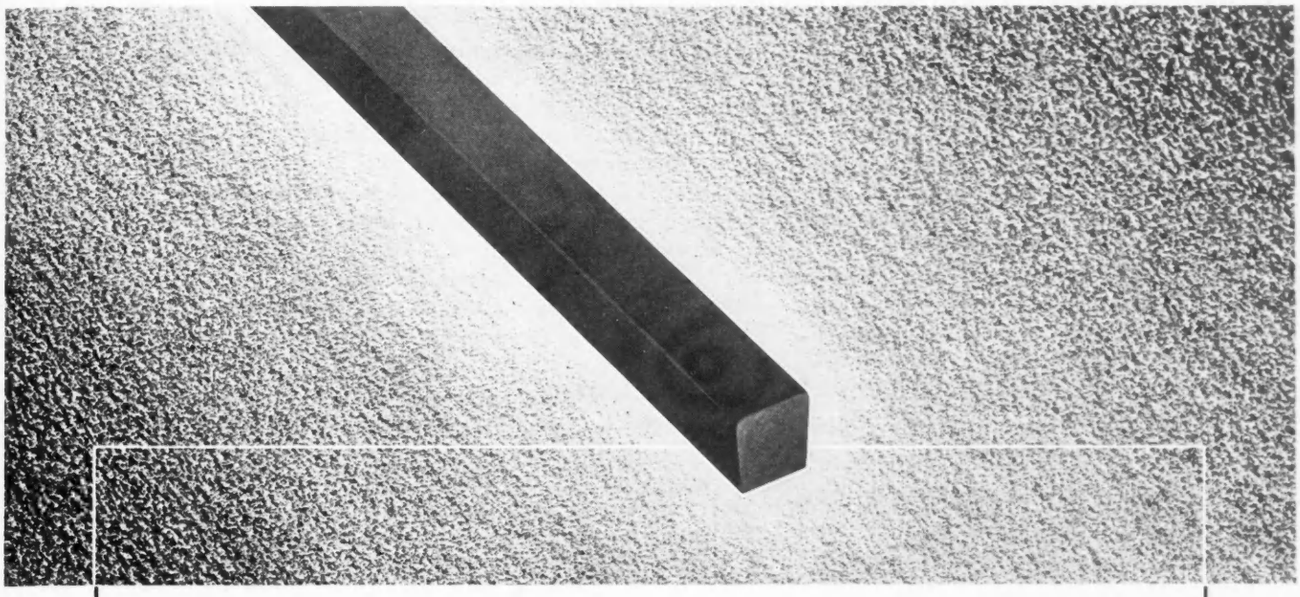
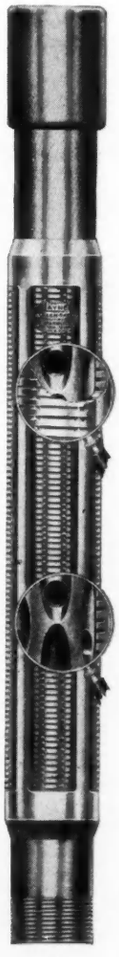

A
B
R
O
M
K
60°
O-R=LENGTH
N
M+N=O-K+N=LENGTH
WELDED BELL & SPIGOT TYPE
WELDED SLIP JOINT TYPE
NOTE: R IS APPROXIMATE CONSTANT IN A GIVEN SIZE AND TYPE OF PIPE
L
L=LENGTH
M+N=LENGTH
THREADED & COUPLED
IF PIPE IS BEVELLED TO FEATHER EDGE JOINTS CONTACT & OVERALL DIMENSION "O." IS CORRECT.
IF PIPE BEVEL HAS A LAND ON THE END, SOME COMPANIES SPECIFY, THAT A DISTANCE "N" BE ALLOWED TO PERMIT PROPER FUSION. IN WHICH CASE LENGTH=O+N IF CHILL RING IS USED AS SPACER, PROPER ALLOWANCE FOR "N" MUST BE MADE
WELDED BUTT JOINT TYPE
A= ORDINARY METHOD
B= METHOD FOR GREATER ACCURACY WHEN NEEDED

FIGURE 10
Linear Dimensions of Pipe Measured before Entering Hole



Slightly WEDGE-Shaped WIRE



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the standard tension for steel tapes supported horizontally throughout their entire length is 10 pounds, a small error will also occur in this procedure.

Another error in pipe measurement is that due to the precision of each unit measurement taken. It was previously mentioned that many operators measure to the nearest inch, in which case the possible error of each measurement is plus or minus 0.5 inch. According to mathematical probability, the total error of a number of single measurements is plus or minus $dN^{1/2}$; *where: d* is the possible error of each measurement, and *N* is the total number of measurements. In a 10,000-foot string of pipe, reading to the nearest inch, the probable error would be plus or minus 9 inches if measured in 30-foot singles, and plus or minus 5 inches if measured in 90-foot thribbles.

Errors in 10,000-Ft. String Due to Precision of Reading

Precision of Reading (Inches)	Probable Error	
	Measured in Singles (Inches)	Measured in Thribbles (Inches)
¼	2	1
½	5	3
1	9	5

These figures indicate that the errors arising from the precision with which the tape is read are practically negligible, provided the measuring crew accurately reads the tape to the precision desired. Here, however, is the source of a common mistake previously discussed.A drilling crew apparently measuring to the nearest inch often reads consistently over, to the next higher inch; or the reverse, to the next lower inch.

In measuring threaded and collared pipe, casing or tubing, from top of collar to top of thread at other end, an accidental error is possible due to improbability of the end of the thread making up exactly to the end of the collar on every joint. On one oil string, 20 joints were observed to bury the threads from a half to one and one-half turns in the collar. This would amount to an accumulative error of 3 feet in a 10,000-foot string.

Welded casing, if measured over-all less a constant correction for overlap of bell or slip joint, is subject to an accidental error due to a plus or minus ⅛-inch tolerance in the overlap.

Where accuracy in casing measurement is desired, for either screw or welded-joint pipe, the procedure shown in Figure 10 as method **B** may be employed. This procedure is commonly referred to as the center-punch method, in which the pipe is measured from the top end of the collar to the nearest inch or tenth of a foot above the threads or inserted portion of the pipe, at which point a center punch mark is placed in the joint. After the joint has been screwed into the string—or, in the case of welded pipe, after it has been stabbed in place, but before welding—the distance from the center punch mark to the top of the collar or bell of the preceding joint is measured. The net length of the joint is the sum of these two measurements. The center-punch method has the additional advantage that an engineer is usually present to conduct measurements of this type. The accuracy of this method is illustrated by one job in which 273 joints of 7-inch casing measured 8242 feet, 11¾ inches. Subsequent checks, both with drill pipe and an electrical-logging device, showed the actual casing seat to be within 6 inches of this depth.

For the greatest precaution against mistakes, it is recommended that one person—preferably a toolpusher or an engineer—be delegated to keep track of and check all measurements for each string of pipe run. Casing length may be checked against drill-pipe depth by running to bottom and then picking up the required distance for setting. This procedure should yield good results, provided casing does not stick easily and provided bottom can always be found with assurance.

Another check applied to casing measurements when it is desired to drill a part, but not all, of a cement plug is the placement of a steel ring at the joint where it is desired that drilling cease. This procedure is especially valuable when casing is set through sands for subsequent perforation. The steel ring effectively stops drilling of cement at the correct depth in the casing, but may later be milled out if desired.

Some operators make a practice of stenciling the measurements on drill pipe. This practice may lead to serious errors—one string of pipe permanently deforming an average of 1¼ inches per 30-foot joint, or a total of 23 feet at a depth of 8835 feet.

In Table 1 an attempt is made to evaluate the probable difference between the true and measured depths. Mistakes due to unintentional errors arising from faulty judgment or confusion in the mind of the observer are not included. The table shows that errors due to elongation caused by weight of the pipe and thermal expansion are far larger than the other errors. If desired, stretch due to weight may be added to the string, either by measurement or by calculation for correlation with special measuring devices; however, as mentioned in the discussion of thermal expansion, it is impossible correctly to estimate temperature of pipe in the hole. Inasmuch as all pipe, whether drill pipe, casing or tubing, as well as special measuring lines, has approximately the same coefficient of thermal expansion as the steel tapes, a satisfactory relative depth can be obtained neglecting thermal expansion if measurements are made at atmospheric temperature.

The remaining resultant errors are comparatively small for the conditions assumed—that the pull on the tape was sufficient to offset the bowing of tape or pipe in derrick, and theoretically could be reduced even further by using a tape tension scale and handle to insure having the proper tension (generally 10 pounds) on the tape. It is interesting to note that, when measuring pipe standing in the derrick, errors due to sag of tape and to excessive pull on the tape may be balanced. For instance, if the middle of the tape bows 6 inches from a 90-foot stand of pipe with an excess pull of 30 pounds (40 pounds total pull) on the tape, the error due to the tape sag is plus 2 feet in 10,000 feet, while the corresponding error due to excess pull is minus 2 feet.

Cable Tools

The key to successful depth measurement with a sand line is in the accurate determination of the "dis-

TABLE 1
Resultant Error in Measuring Depth with Drill Pipe
(Errors Given in Feet)

Where measured	Lying on Pipe Rack			Standing in Derrick			Swinging from Elevators		
Unit measured	30-Ft. Singles			90-Ft. Thribbles			90-Ft. Thribbles		
Depth, in feet	7,500	10,000	12,500	7,500	10,000	12,500	7,500	10,000	12,500
Elongation due to weight:									
Assume E = 30,000,000 lb. per sq. in.	−2.71	−4.79	−7.65	−2.71	−4.79	−7.65	0.00	0.00	0.00
Variation due to different E	±0.09	±0.16	±0.25	±0.09	±0.16	±0.25	0.00	0.00	0.00
Elongation due to mixed string:									
Assume 4½-in drill pipe and 100 ft. of 100-lb.-per ft. drill collars	−0.30	−0.45	−0.57	−0.30	−0.45	−0.57	0.00	0.00	0.00
Thermal expansion:									
Assume 50 deg. F. temperature differential	−2.60	−3.50	−4.35	−2.60	−3.50	−4.35	−2.60	−3.50	−4.35
Precision of measurement:									
Assume reading to nearest half inch	±0.33	±0.38	±0.42	±0.19	±0.22	±0.24	±0.19	±0.22	±0.24
Sag in tape due to pipe leaning in derrick	0.00	0.00	0.00	+0.04	+0.06	+0.08	0.00	0.00	0.00
Stretch in tape:									
Assume 2-lb. pull on pipe rack, 15-lb. pull in derrick; standard tape tension, 10 lb.	+0.40	+0.53	+0.67	−0.25	−0.33	−0.42	−0.25	−0.33	−0.42
Resultant error:									
From	−4.79	−7.67	−11.23	−5.54	−8.63	−12.00	−2.66	−3.61	−4.53
To	−5.63	−8.75	−12.57	−6.10	−9.39	−12.98	−3.04	−4.05	−5.01
Maximum total error between two measurements, neglecting weight of string and thermal expansion.	0.84	1.08	1.34	0.36	0.76	0.98	0.38	0.44	0.48

tance over." This may be illustrated by the probability formula previously used. For convenience, assume the "distance over" from the sand-reel flanges over the crown block to the surface of the floor is 150 feet. Then, reading to the nearest one eighth or one quarter inch, and using a 5-foot stick, a 25-foot tape or a 50-foot tape, the following probable errors will be obtained:

Where: d=possible error in each measurement.
N=number of measurements.
$dN^{1/2}$=probable total error.

Precision of Measurement (Inches)	d (Inches)	Length of Single Measurement (Feet)	N	Probable Total Error in 150 Ft. (Inches)
⅛	±1/16	5	30	±0.34
		25	6	±0.15
		50	3	±0.11
¼	± ⅛	5	30	±0.68
		25	6	±0.30
		50	3	±0.22

In using the "distance over" to measure depth, the probable error as given above becomes a constant; and, in the specific case mentioned, measuring to ¼-inch with a 5-foot stick would give an accumulative error of 3 feet at a 7500-foot depth, almost 10 times greater than similar errors with drill-pipe reading to the nearest ½ inch.

Curves of elastic stretch submitted for a ½-inch 6 x 7 cast-steel sand line gave moduli of elasticity varying from 11,500,000 to 15,000,000 pounds per square inch, as follows:

	(Lb. Per Sq. In.)
1st test	11,500,000
2nd test, same day as 1st test	14,900,000
3rd test, 24 hours after 2nd test	13,900,000
4th test, same day as 3rd test	15,000,000

The decrease in the modulus after a 24-hour rest indicates recovery of resilience common to hemp center lines.

Variations in moduli of elasticity prevent permanent flagging of sand lines. Each depth measurement must be made at the well, and for best results "distance over" should be established immediately prior to testing depth.

[To be continued]

Part 3 of "Well-Depth Measurement" will deal with special measuring devices, measuring tapes and the like. It will be profusely illustrated as the two foregoing installments have been, and will conclude with definite recommendations for properly measuring wells and tubular goods.

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WORLD DEVELOPMENT and TECHNOLOGY

Edited by
WM. V. GROSS, Associate Editor

Allowable Cut

Turner Valley purchases reduced to 30 percent of potential . . . action condemned . . . ask aid

CRUDE oil purchases in Turner Valley field, Alberta, Canada, were reduced approximately one-third, from 44 to 30 percent recently by the Royalite Oil Company, Limited, sole pipeline operator in the field. The action was necessary "due to a large accumulation of stocks both at the Calgary terminal and in field tankage, and because recent completions have also considerably increased the potential of the field," explained J. H. McLeod, president of the company.

The major company's announcement was vigorously condemned by individual producers, while directors of the Alberta Petroleum Producers' Association and the Oil & Gas Association made plans to take united action on the matter. Protests pointed to importation of United States crude and refined products into the Canadian prairie provinces and to failure of marketing companies to extend the market for Turner Valley crude beyond the western boundary of Ontario.

Price Cut Feared

The reduction in allowable came as a surprise to Turner Valley operators, many of whom expected to see an upward revision following completion several weeks ago of a new pipe line linking the field to Calgary, refinery and shipping center. Fears were frequently expressed in Calgary last week that a reduction in the crude price may follow.

W. S. Herron, pioneer Turner Valley operator, in a letter to Rt. Hon. R. B. Bennett, urged that the Dominion government make every effort to gain wider markets for Alberta crude. "It now makes it an uneconomic undertaking to drill wells at the high costs which prevail here when operators are obliged to keep the production shut in to this extent," Herron said. "This proration is sure to shut out capital from coming in for further development. Even the established companies, apart perhaps from the Royalite Oil Company, cannot carry on development on this basis.

"Canadian oil producers should receive a great part of the Canadian market," he continued. "The greater part of that market is in Eastern Canada, and in all fairness western oils should be going to that Eastern Canada market. The government should at least arrange with the railway companies to give low freight rates on oil shipments to the east, and, if necessary, bonus the railway companies to some degree. If wheat can be shipped at low freight rates, when we grow four hundred million bushels per year more than the country can consume, surely it is only fair that we should have an equitable proportion of our home market for our oil production."

Wires urging immediate government action were also sent to Prime Minister Mackenzie King by Francis P. Byrne, vice president and managing director of Anglo-Canadian Oil Company, Ltd., and Maynard J. Davies, president of Davies Petroleums, Ltd.

"Although crude oil supplies from foreign sources to the extent of 51,523,000 gallons entered Canada in April, Turner Valley wells capable of producing some 37,000 barrels per day, with 10 new wells being completed, are now to be restricted to an amount of 11,000 barrels per day," Byrne told the prime minister.

Davies wired: "Foreign oil companies in the west distributing foreign products are a menace to the development of Alberta oil resources. No step has been taken to curtail this distribution; no assistance has been given Canadian major oil companies in their efforts to distribute the product of Alberta, which is the major oil resource of Canada and the Empire."

Germany's Effort

Synthetic production of fuels and lubricants prime objective; results still questionable

By RUDOLF SEIDEN, C. E.,
Kansas City, Mo.

GERMANY is endeavoring, today more than ever, to become entirely independent of the import of raw materials. One of the most important German import goods has always been oil and oil products. During the last year, Germany was able, with greater strains, to produce not more than a small percentage of her needs of motor oil, fuel, kerosene, and lubricants.

Therefore, it was a gigantic command which the political leaders of Nazi-Germany gave to the German scientists and chemical engineers in their "Four year plan," the command to make Germany independent of the import of oil. If they can do this the producing countries will lose a big consumer. More than that, there will be also a probability that many other oil-poor countries will follow the example of Germany, if a solution of the problem is obtained.

The Military Angle

There are several reasons for attempts to produce petroleum products synthetically. Western European countries do not possess oil in their own soil and most of their colonies are poor in oil. Secondly, oil products are, today more than ever, important for warfare: aeroplanes, tanks, battleships, submarines, etc., all of them need many oil products. While the generals and admirals of former centuries had to worry over wages and food for soldiers, today their greatest problem is motor oils and lubricants for the modern arms in war-time.

England, therefore, has built up her own Oriental policy; France contracted an alliance with Russia, and the U.S.S.R. is the second largest oil producer of the world, next to the U.S.A.; Italy put her hopes upon the Albanian oil fields which are not so rich, but very valuable in war-time

(*vide:* my article in THE OIL WEEKLY, November, 1936).

Italy also sent a committee to her new colony, Ethiopia. (This committee did not find oil, but it did find a few locations where oil may be found in the future.)

Tree Produces Benzine

More interesting is the fact that a spurge-plant was discovered in Ethiopia that can be tapped like a caoutchouc tree. The outflowing juice of this *Chandelier-Euphorbia* gives, after a chemical treatment, a motor oil similar to benzine, in 59 percent output; the remaining 40 percent of the juice is like tar and can be used for road making. The *Euphorbiae* cover a district of about 120.000 acres. On the average, there are 120 plants to the acre. Each *Euphorbia* produces from 7 to 9 pounds of motor oil a year. The Italian committee called the product "vegetable-benzine."

Here is not the place to investigate in what respect the mentioned political agreements were influenced by the oil-hunger of the nations. One may suppose that Europe, already heavily armed, would have been involved in a new war long ago if there had not been worries over raw materials, especially oil products. It is, therefore, fortunate that the leaders of the power hungry nations of Europe still doubt whether they will have, for years, enough ores and oil. Only this uncertainty has prevented the outbreak of a European war so far, and it will prevent it until the day when the economical and technical aims of Europe's dictators are reached—and not one day longer. However, a war may start sooner through some unfortunate incident.

Germany's Policy

Germany's oil policy is different from that of England, France and Italy. Germany knows that it will not possess colonies with oil fields for a long time, possibly never. And she has no money to buy interests in foreign oil concerns. But Germany is rich in coals and ores, rich in industry and well-trained chemists. Therefore, Germany looks at the oil problem from the chemical-scientifical and chemical-technical viewpoint. During the last few years, the methods of coal hydrogenation of Prof. Bergius, Prof. Fischer, etc., have been studied not only in most of the European civilized states, especially in England and France, but also in the United States and in the Far East. Today, there are all over the world hydrogenation factories or experimental stations to manufacture synthetic gasolines and oils.

It is not surprising that German chemists, today more than ever, are investigating natural oil, in spite of the fact that they are interested principally in artificial products. The Germans know very well that one cannot manufacture a very valuable substitute, if the natural product, that has to be imitated or even bettered in its qualities, has not been thoroughly investigated. And who would say that we know already everything concerning the properties and possibilities of oil?

Study Valuable to U. S.

Problems which occupy the German chemists and engineers should intrigue the American oil men, because the answers to the studied questions bring to them direct advantage and profit, while they are only of theoretical value to the Germans. If one observes the development of chemistry and metallurgy in the world, he must note that in Germany problems concerning lubricating oils are of greater importance than gasoline.

What "Plan" Requires

The "Four year plan" of oil requires that the entire demand of lubricants must be met by Germany's own production. That also applies to supplementary agents used in lubricants for special purposes. There is no possibility of meeting the demand for lubricants with the amount produced from German oil. Consequently it is necessary to manufacture synthetic products. The latter have a very different structure and properties from those obtained from natural oil. It must also be admitted by the most convinced followers of the German regime of today that the lubricants produced from oil have been continually improved in quality to fit special requirements, and that, nevertheless, their prices have been continually lowered. With synthetic products, there will not be so great a choice and, therefore, the pretensions of the users will have to be modest. The fixation of the lowest limits concerning those qualitative requirements employs many German oil experts and chemists at present.

Current Research

Research work is carried on in Germany to investigate thoroughly the compounds produced through natural ageing. Also many other factors which make the value of a lubricant: ability to emulsify, influence upon corrosion, amount of the evaporating oil, etc., are being studied by the Germans. All these efforts tend to grasp scientifically the qualitative requirements that may be laid to lubricants. To define exactly and to express numerically those qualitative demands with the help of newly developed test methods is being attempted. Only after attainment of this aim, will it be possible to replace the many lubricants produced from oil with a few synthetic types. Therewith, a transposition of the oil industry and a simplification of the factories would be brought about, and storage of lubricants could be diminished and they would be cheaper. But it remains a question as to whether this aim can be realized in such a relatively short time.

Both Sides Appeal

Expropriation suit goes to Supreme Court . . . Policy of government questioned . . . Want foreigners deported

WHETHER or not their expropriation is constitutional is the answer demanded of the federal supreme court of Mexico, by the expropriated British and American oil companies in their appeal from the rejection of their suit to set aside the expropriation decree by the first district Mexico City court.

Appeal to the highest court in Mexico, which was not unexpected, demonstrates that the companies are making good their announcement that they will exert all legal means to fight for recovery of their properties.

The supreme court is expected to uphold the lower tribunals. In that event, what the companies' next step will be is a matter of speculation. They cannot appeal to President Cardenas in this case as it was he who decreed the expropriation.

The supreme court is expected to render its decision before the end of June.

Telegraphic communication to THE OIL WEEKLY from Mexico City June 17 states the National Oil Workers Union of Mexico has asked the supreme court of that nation to reserve the ruling of the Mexico City district court which stipulated that the books, records, archives, correspondence files, and cash of the expropriated companies taken over by the government must be returned to those companies. The union contends that the archives, et cetera, are essential to the operation of the oil industry; that without them it is impossible to keep tab on the business and to calculate the amount of indemnification due the companies.

Mexico Would Lose

Regarding the offer of President Cardenas of Mexico several weeks ago to indemnify the expropriated oil companies by allowing them 60 percent of Mexico's production for the next 10 years, or until the amount of indemnity for expropriation is taken care of, it has been pointed out that the proposition in the long run would not be fair to the American companies or to Mexico, and that that country would actually collect less under such an arrangement than she collected under the old scheme of things prior to expropriation March 18.

Sixty percent of production would not cover the cost of production in the Tampico fields, it is said, while 60 percent of production from Poza Rica field, which still is largely a flowing proposition, would be a lavish allowance from the Mexican government.

Determined to boost production of Mexican Gulf Coast oil fields, Cardenas has ordered drilling 4 wells at Poza Rica, establishing a modern townsite there for workers, building roads to connect the zone with Tampico and Mexico City, reconstruction of the pipe line between Cacalilao fields and Tampico, building a line from the Tuxpan terminal to connect with Penn

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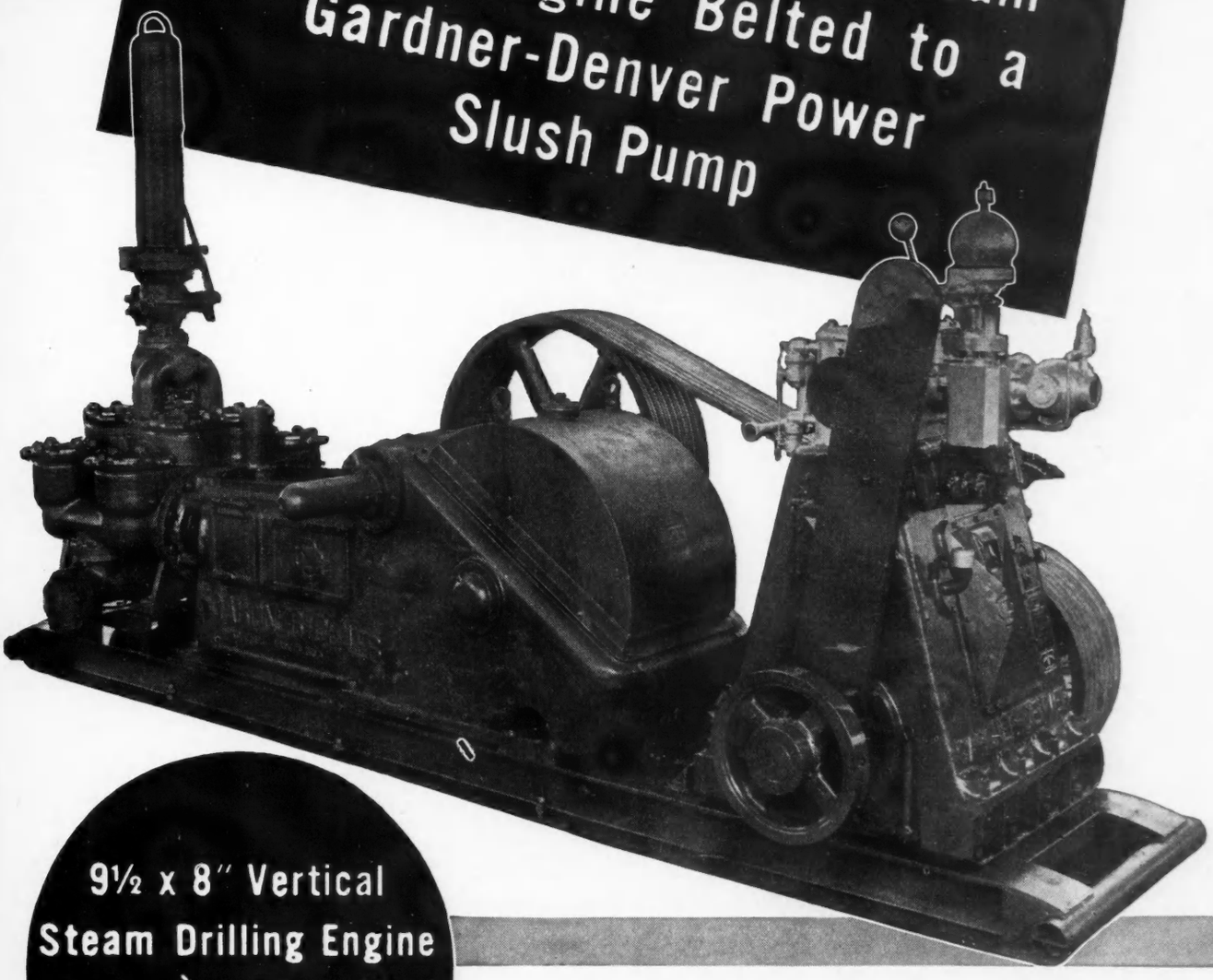

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SMALL SHIPMENT

The first definite announcement of an oil products export was made last week by the Mexican government, that of 7950 barrels of fuel oil and 2900 barrels of Diesel oil to Montevideo for the account of the Uruguayan national administration of combustibles. The shipment was made on the tanker *Vinga* from Coatzacoalcos, Vera Cruz state.

Mex Fuel Company's pipe line and the repairing of Penn Mex's pipe line from El Alamo to Tampico.

Would Peg Peso Value

Debate in the senate June 14 as to whether authority should be vested in the finance minister to fix the internal rate of exchange for the peso indicates Mexico is not satisfied with the present fluctuations of the peso, which is around 4.60 pesos to the United States dollar. Prior to expropriation of the oil companies, the rate of exchange had been 3.60 for quite a while. On occasions the value of the peso has been as low as 4.90 for a dollar.

Cardenas, incidentally, has already stated Mexicans might be called upon to make additional personal sacrifices to pull the country out of its slough of economic despondency. The inception of the present unsatisfactory state of affairs in that country dates, in domestic as well as in foreign press, back to the day of expropriation of the foreign controlled oil companies, March 18.

Asks Pointed Questions

Pointed questions about the Mexican government's announcements of programs for improving the general situation which President Lazaro Cardenas admits is grave and about the government's frequent but not very complete reports of export oil sales are beginning to be asked by "Excelsior," an important Mexico City daily newspaper. A commentator for the print remarks:

"If the president's message to the nation delivered from San Luis Potosi was interesting, his statements made at the collective gathering that followed the address were even more interesting. At the meeting, he said, clearly and definitely, 'We cannot expect that capital, which is in the hands of the enemies of the people and the government, will aid the nation in solving its economic problems.'

In Hands of Proletariat

"It seems that Gen. Cardenas places the future of Mexico in the hands of the national proletariat. 'There is the possibility that the oil workers will be able to deliver gas to Mexico City and industrial centers.'

"The president's program for solving the national economic depression is based upon the proposition that workers and farmers 'work double' and that each government employee be converted into a progressive factor to accelerate and multiply production. Thus, 'teachers will compile and publish cheap text books; employees of the Indian affairs department will construct an educational center' and so on.

"Naturally, all these works, some of them very expensive, worth several million pesos, demand—we won't call it capital—but money in abundance. But as only the salaries of the workers and the government employees are available, these people will have to make heroic sacrifices.

Reliability Questioned

"DAPP (the government's publicity bureau) issued an official report that was very optimistic of the collective gathering. 'At this meeting,' said DAPP, 'important data concerning the magnificent progress of the oil industry were given.' Among the oil data we find these, which are truly remarkable (but which were not reported by our correspondent who did fully report the president's speech) '19 tankers were loaded at Tampico and 29 others, of various lines, are loading thousands of barrels of oil. There are 18 tankers registered for oil exports.'

"The oil data comes from the management of Petroleos Mexicanos (the official oil company) but they are not in accord with the data announced at the collective gathering. It was announced at the gathering that 83 percent of the tankers in the world are 'controlled' by the Anglo American companies, hostile to the government, and that the other 17 percent belong to different countries, a thing that was previously known and which is really true.

"Perhaps the management of Petroleos Mexicanos has obtained that 17 percent of tankers to come to Tampico to resume oil exports? This would be first class news, and because it is so good it should be spread all over the country with a profusion of details, such as names of tankers, capacity, figures regarding carrying, destination of the oil, etc.

"Information that is given the public on matters of such interest must be clear, precise and definite, without leaving the least room for doubt, especially under present circumstances when it is necessary to pick up the public spirit, not only to buoy it up but also to make all Mexicans cooperate in the realization of the great work that is being pursued."

Want Foreigners Deported

Laborites have asked President Lazaro Cardenas to deport all foreigners who wilfully spread alarmist rumors and systematically conduct propaganda that is detrimental to Mexico. They specifically charge that a group of foreigners, residents and visitors, among them Americans, is engaged in distributing folders that contain statements which are not only insulting but unfair to Mexico.

Trinidad production

Production of crude oil in Trinidad during April was 1,418,825 barrels, according to R. S. Mackilligin, inspector of mines and petroleum technologist for the colony.

WITHDRAWS FROM IRAN

PRESS dispatches from London June 16 stated Amiranian Oil Company had abandoned its 190,000-square mile concession in Iran due to trouble with that government, climaxed when the government allegedly prevented the company from landing material necessary to develop the concession.

Diplomatic circles believe the company's withdrawal from five provinces where acreage was held under concession was a result of pressure brought on Iran by Russia, one of the best customers for oranges raised in Iran. The Baku region fields of Russia are just across the Caspian sea from some of the most likely looking spots in the Amiranian concession, it is said.

Eastern Venezuela road and pipe line to help country

The all-weather oiled road and oil pipe line, now being constructed between El Tigre (Oficina), Venezuela, and Puerta La Cruz-Guanta will undoubtedly be of great importance to a large area of Eastern Venezuela. This road and pipe line are being constructed by Mene Grande Oil Company for the purpose of providing an outlet to the sea for the oil in its concessions in the region near Oficina. The road will be somewhat over 200 kilometers long, and will provide rapid and dependable transportation facilities. The existing road is very bad, and is impassable during much of the year. The country traversed is a flat plain, except for some low hills near the coast. The road should be finished in about 15 months.

Barcelona, the city for which Guanta and Puerta La Cruz are ports, will tend to displace Ciudad Bolivar as the distributing center for the districts served by the road, and will undoubtedly become an important center. The increase in importance of Barcelona probably will not mean a decline in that of Ciudad Bolivar since the general increase of activity in Eastern Venezuela, and the eventual exploitation of oil up the Orinoco and Apure rivers should more than balance the trade lost to Barcelona.

Would permit leasing of Canadian Indian reserves

First reading was given by the Canadian house of commons last week to a bill that would empower the government to issue mineral and oil prospecting leases on Indian reserves and also to set up a revolving loan fund to assist Indians in setting themselves up in self-supporting agricultural or other projects. Both provisions, while not related, are covered in the same bill.

The proposed act would authorize the governor-in-council to make regulations enabling the superintendent general to issue leases of "land deemed to contain minerals and to grant in respect thereof the right to prospect for, mine and take away the same." Fees or royalties that might be received from such leases would go to the credit of the Indian band concerned.

MEN IN THE INDUSTRY'S NEWS

F. E. HATFIELD, West Texas district production superintendent for Gulf Oil Corporation with headquarters at Odessa, will depart in July for Ciudad Bolivar, Venezuela, where he will assume charge of development work for the Mene Grande Oil Company, subsidiary company. Hatfield has been with the Gulf Oil Corporation since 1921, and prior to his transfer to West Texas in 1934 was in charge of Texas Panhandle operations. He will leave on the foreign assignment mid-July, and will be accompanied by his wife and a young son. T. A. Pickering, former assistant, has succeeded Hatfield as West Texas superintendent, and W. C. Todt has relieved Pickering.

JOHN KAPRAL, drilling superintendent for the Gulf Oil Corporation in the Texas Panhandle and driller on the company's discovery oil well in the district, was retired June 1 after completing 50 years of continuous field service, with the last 20 years as an employe of the above company. Rated as an expert in overcoming difficult fishing jobs, he was frequently called upon by the company's other production districts. John Hash has succeeded Kapral as drilling superintendent.

LEE S. MILLER, Detroit, has been appointed as chief engineer of natural gas by the Michigan Public Utilities Commission, Chairman Paul H. Todd announced this week. For the past 6 years Miller has been engaged in consulting practice in Michigan in both gas and petroleum geology. He served 5 years with Carter Oil Company as superintendent of Oklahoma natural gas development. He was for 6 years with the U. S. Geological Survey as a natural gas engineer, stationed at Casper, Wyoming.

C. M. JOHNSON, secretary and office manager of American Liberty Oil Company, Dallas, has resigned to acquire a substantial stock interest and participate in the management of American Lubricator Company. Ruston L. Ardrey, vice-president and treasurer, has been elected secretary.

L. S. McDOWELL, general superintendent of production for American Liberty Oil Company, is now located at the company's general office at Dallas, having formerly resided at Kilgore to be near the company's most active operations.

J. F. HOSTERMAN, division geologist, and L. F. Meister, assistant manager of the land department of Amerada Petroleum Corporation, have been transferred from Fort Worth to Tulsa. The company will continue to maintain a production office at Fort Worth, with F. W. Covault, superintending operations in Texas, New Mexico and Louisiana.

JOHN C. MILLER, division geologist for The Texas Company, was the principal speaker at the regular monthly meeting of the South Texas Geological Society, which was held in Corpus Christi Friday evening. Miller's discussion was on "Tertiary Formations of the Texas Gulf Coast."

J. R. McWILLIAMS, vice president and general manager of Standard Oil Company of Louisiana, with headquarters at Shreveport, was host last week to the following visiting officials of the company: Eugene Holman, Wallace E. Pratt, O. C. Sharp and Dr. Burke of New York; J. J. Conry, L. C. McCollum, W. R. Finney, E. V. Whitwell and F. W. Lloyd of Tulsa; and M. J. Rathbone of Baton Rouge. The officials made a tour of Standard of Louisiana's properties in North Louisiana and Arkansas.

JOSEPH PURZER has been named district chief geologist in Shreveport for Phillips Petroleum Company, succeeding D. H. Bingham, who has been transferred to LaFayette, Louisiana, to be in charge of a newly opened office there for the same company.

M. F. JOHNSON, who has had the Seminole area of Oklahoma as scout for Continental Oil Company, has been transferred to Western Kansas and will make headquarters at Great Bend. In that place he succeeds J. C. Julien, who was transferred to the land department.

E. L. NEWTON, president of Hoosier Drilling Company, development company that opened the Birk City McClosky sand pool of Henderson County, Kentucky, recently, last week, discussed oil exploration before the Optimist Club at Evansville, Indiana.

LOUIS F. CLARK, sales promotion manager for Arkansas Fuel Oil Company at Shreveport, has been named manager of the company's Arkansas division, with headquarters at Little Rock. He succeeds the late J. D. Flynn.

HOWARD V. SMITH, for the past 11 years assistant superintendent of Skelly Oil Company's El Dorado refinery, has been named chief chemical engineer of the Barber Asphalt Corporation in charge of the company's technical department. He succeeds J. Strother Miller, Jr., who has been named technical adviser to the company.

PAUL B. ROWLAND, former oil scout for Sinclair Oil Company in the Shreveport territory, and for the last fifteen years a resident of the west coast, visited oil scout friends in Shreveport last week.

PAUL H. PRICE, who has been West Virginia state geologist, has been appointed associate professor and head of the department of geology of West Virginia University. Dr. Price will continue to serve as state geologist also.

JAMES A. VEASEY, vice president and general counsel of the Carter Oil Company, Tulsa, is spending a period at Ann Arbor, Michigan, home of the University of Michigan from which he was graduated in law, where he is working on a paper on well spacing. This will be read before the coming annual meeting of the American Bar Association, Cleveland, in July.

GEN. JAMES G. STEESE, San Antonio, president of Guajillo Oil Corporation, active in Oklahoma and Texas, has recently been elected president of Slate Creek Placers, Incorporated. He will sail from Seattle on June 25 to supervise this corporation's gold mining activities in Alaska during the open season. General Steese, a civil engineer by profession, first visited Alaska in 1913 to report upon the proposed government railway project. Subsequently he served as president of the Alaska Road Commission, chairman of The Alaska Railroad, and director of public works for the territory.

ERNEST HARTFORD, field secretary of the American Society of Mechanical Engineers, spoke to members of the Engineers Club of Tulsa at luncheon June 13. He outlined the many activities a local organization of engineers may undertake in behalf of the profession.

K. S. ADAMS, president of Phillips Petroleum Company, Bartlesville, was the speaker before the Tulsa Sales Executives Club June 13.

RICHARD (DICK) LEAR, is now associated with Heyser and Heard in Corpus Christi. He formerly was with the Plaza Hotel in that city.

W. E. GREENMAN, The Texas Company, Houston, was the principal speaker at the Houston Geological Society's regular weekly luncheon at the Lamar Hotel, June 16. His subject was "Geology of the Picket Ridge Oil Field, Wharton County."

E. C. CASEY, formerly with Shell Petroleum Corporation, Houston, has recently been appointed district man for the company in East and Central Texas, with headquarters at Tyler, Texas.

ELTON RHINE, formerly with Cities Service Company, Houston, has been appointed district land man.

M. E. STEIG will be district geologist in the newly opened Houston offices of Phillips Petroleum Company.

C. E. "DOC" MANION, assistant chief geologist in the Gulf Coast territory for Superior Oil Company, Houston, is in a local hospital with a severe case of the influenza.

S. A. MORSE, president of Union Gas Company of Canada, Ltd., Toronto, announces that in the year ended March 31, 1938, 13 new producing wells were drilled by the company. The wells were drilled in Southwestern Ontario and had a combined open flow of 50,000,000 cubic feet.

P. J. HATTERMAN VAN OUDENOL, Alberta oil operator, returned to Calgary last week after an eight months' stay in Europe. He said that financial interests in Holland, Belgium and France were interested in Alberta oil development.

DIED:

R. E. HAYLETT, director of manufacturing of Union Oil Company, a member of the board of directors, and one of the foremost petroleum refining and research men on the Pacific Coast, died last week at Good Samaritan hospital, the result of illness while on an eastern trip. Born in Milwaukee, Wisconsin, August 2, 1891, Haylett was a graduate of Beloit College and Massachusetts Institute of Technology, entering the employ of Union Oil Company as a chemist at Oleum, California, refinery in 1916. He took an active part in the technical progress of the company, and in 1920 was appointed chief chemist, two years later being made manager of research and development. Union's research laboratory at Wilmington, regarded as one of the finest in the country, was built under Haylett's supervision. In 1926 he was selected as technical assistant to the vice president in charge of manufacturing and in March, 1931, was appointed director. Three months ago he was elected to the company's board of directors. In 1937 he was elected chairman of the Central Committee on Refinery Technology, API. He leaves his widow, Mrs. Alice M. Haylett, two daughters, Mrs. Oliver Bardin of Salinas and Clarice Helm Haylett, 16. Services were held last Wednesday in Long Beach.

THOMAS W. SMITH, vice president and treasurer of Luling Oil & Gas Company and president of Logco Drilling Company, of San Antonio, died June 12, as a result of injuries received when he fell from his bedroom window in San Antonio. Smith, 32, was well known in Southwest oil circles. He, his father and brothers formed the several companies which had properties in Salt Flats, Caesar, Refugio, Greta and other South Texas fields.

CARL R. BLACKMAN, president of Paramount Royalty Company, died at his home in Tulsa June 14. He had been in bad health since September, 1937, when he was stricken while in Canada. Brief funeral services were held in Tulsa, June 16, after which the body was sent to Colorado Springs. Blackman was reared in Colorado Springs. After graduation from Colorado College there he entered the mining business. He came into the oil industry while helping to assemble leases for the Big Muddy and Salt Creek fields in Wyoming. In 1915 he moved to Oklahoma, living first at Nowata and then at Okmulgee before moving to Tulsa in 1921. He was active as an oil producer in his first years in Oklahoma and later added royalty to his activities.

W. H. PATTON, 54, and Edward Richardson, 24, both with Patton Corporation and of Splendora, Texas, were instantly killed at New Iberia, Louisiana, June 12 when capping a blowing well in Vermilion Bay. The accident occurred when a 37,000-pound manifold blew from the casing head, striking the head of Will Patton and knocking him and Richardson into 7 feet of water. H. L. Patton, who tried to rescue his brother from flaming gas, was struck by a piece of heavy machinery and lost one arm.

W. H. Patton is survived by his widow, two sons and three daughters. Edward Richardson leaves his widow and a small daughter.

FRANK E. WOLFE, 67, member of the drilling contracting firm, Wolfe Brothers, died at his home in Tulsa, June 15. He had been in poor health for several months but played host to the "Old Timers" during the last International Petroleum Exposition at his farm on the Sapulpa road. Wolfe, a native of Ohio, came to Kansas in 1902 and moved to Oklahoma three years later.

BEN F. ROUNDS, 46, Fort Worth oil operator, was fatally injured June 10 when his auto became involved in an accident on the outskirts of Dallas. He was en route home, accompanied by his brother, Melburn Rounds, after visiting oil properties near Shreveport. Funeral services were held at Fort Worth June 13.

GEORGE W. WILSON, 68, who was associated with Charles Snaith in oil and gas operations at McDonald, Pennsylvania, died June 10 of a heart attack at his home in Weston, West Virginia. Surviving are his wife and three children.

CORNELIUS NEIL HARPST, 73, one of the oldest oil producers in the Findlay, Ohio, region, died June 3. Harpst Brothers Oil Company, which formed with his two brothers in 1904, has over 50 producing wells west of Findlay. At the time of his death he was a member of the board of directors of the Independent Eastern Torpedo Company, and at one time had been president of the old Lima Crude Association. He is survived by his wife and one son, Clyde C. Harpst, who was associated with his father in the oil business.

EDWARD KENNERDELL, 87, pioneer Pennsylvania oil operator, died June 6 at Cleveland, Ohio, after a brief illness. Three sons and a daughter survive him.

Petroleum industry unites for Western World's Fair

Uniting for a single impressive exhibit that will tell the story of oil from the "human interest" point of view, the petroleum industry has signed a major space contract that insures the expenditure of at least $300,000 on a spectacular display at the Golden Gate International Exposition in 1939.

The cooperative effort of the industry will be exerted through Golden Gate Exposition Petroleum Exhibitors, Inc., a non-profit corporation organized for the purpose, and headed by B. I. Graves. Among the companies already participating are General Petroleum Corporation, Gilmore Oil Company, Richfield Oil Corporation, Rio Grande Oil Company, Seaside Oil Company, Shell Oil Company, Standard Oil Company of California, Sunset Oil Company, The Texas Company, Tide Water Associated Oil Company, and Union Oil Company. Others are being invited to join.

A contract has been signed for approximately 40,000 square feet of exhibit space in the unique Vacationland building on Treasure Island, Western World's Fair site in San Francisco Bay. Artists and designers are developing plans for a comprehensive display of unusual beauty.

The joint display on Treasure Island will supplement an expenditure of about $500,000, by the individual oil companies through established advertising media, calling attention to the Western World's Fair as a travel incentive. Directors of the collective exhibit, in addition to Graves of Tide Water Associated Oil Company, are W. B. Curtis, General Petroleum; H. E. Britzman, Richfield; F. A. C. Guepin, Shell; W. J. Held, Standard; T. H. Webb, Texas, and A. C. Galbraith, Union.

Western petroleum executives witness the signing of a contract, involving 40,000 square feet of exhibit space in the Vacationland Building on Treasure Island, between the 1939 Golden Gate International Exposition and the newly formed Golden Gate Petroleum Exhibitors, Inc.

Left to right, seated, are: H. D. H. Connick, chief director of the Western World's Fair; B. I. Graves, Tide Water Associated Oil Company, and president of the petroleum exhibitors; F. A. C. Guepin, Shell Oil Company; and A. C. Galbraith, Union Oil Company.

Standing left to right, are: P. H. Patchin, Standard Oil Company of California; H. E. Britzman, Richfield Oil Company; T. H. Webb, The Texas Company; W. B. Curtis, General Petroleum Corporation; W. A. Newhoff, Union Oil Company; W. W. Monahan of the exposition; A. B. Tanner, attorney; Walter J. Held, Standard Oil Company of California; E. A. Hugill, Jr., Shell Oil Company; and Austin Black, manager of Petroleum Exhibitors, Inc.

THE WEEK'S NEWS SUMMARIZED

Legislation

Although much oil legislation was discussed, Congress adjourned last Thursday with but one oil bill enacted. A measure providing for consolidation of naval crude reserves met with approval at the last minute, but two other bills that were pushed during the session had an untimely fate. These would have required divorcement of the marketing division from other branches of the industry, and would have vested title to California off-shore oil fields with the federal government. The former died in committee, and the latter was stranded on the House calendar. Unless a special session is called in November, it will be necessary to reintroduce these as new measures if their enactment is desired next year.

Markets

For the fifth consecutive time in a year, crude oil prices in Pennsylvania have been reduced. The past week saw a 25 cent decrease in postings. Although this marred the industry's general market situation, in contrast, further improvement in gasoline tank car quotations was noted. The new Pennsylvania crude prices are from $1.02 to $1.12 a barrel below prices in effect a year ago. Tank car gasoline prices in effect late last week were generally from ⅛ to ¼ cent a gallon higher than a week previously in both the Oklahoma-Kansas and Chicago markets. The gasoline market is being bolstered by the effective curtailment of crude production and refinery runs in the Mid-Continent area.

Pipe Line

Application for permission to construct a 250-mile pipe line from the Lance Creek, in Wyoming, to Denver, Colorado, has been filed with the Colorado Public Utilities Commission. Such a project, if built, would have a cost of approximately $3,000,000. Several short lines were announced during the week.

Allowables

Although July allowables for Texas will not be known until after the statewide hearing June 20, two of the commissioners are known to favor higher allowables, and it is indicated that the two-day a week shutdown plan may be curbed to only one day—at least in some areas. Commissioners Terrell and Thompson both expressed themselves as pleased over the improved conditions of the industry, particularly the reduction of crude oil stocks in recent weeks.

Meanwhile, Kansas was threatening to withdraw from the Interstate Oil Compact Commission. Last week Governor Huxman stated the commission had no power and thus could not enforce any orders to help the marketing situation. Huxman has been a critic of the compact commission in the past, and recently has been asking that a greater allocation of the nation's oil markets be granted to Kansas.

The California oil regulation measure became effective last week, when sufficient signatures for requiring a popular vote on the act were not obtained. The bill is designed to regulate production of oil on state-owned tidelands only.

Meanwhile, the production of three fields in Kansas in which pipe line companies have not been taking the full allowable, have been given smaller allocations. This action took place following a hearing as to why the purchasing concerns did not take the field's allowed output.

It has been suggested to the Oklahoma Corporation Commission that marginal wells in the Oklahoma City Wilcox sand zone be cut back to a 165 barrel per day allowable.

Labor

"Labor peace" between the two principal unions in the United States was unanimously indorsed by delegates of the Oil Workers International Union, an affiliate of the C. I. O., during its annual convention last week. It was suggested that a national labor office be opened in Washington to iron out any difficulties arising between the C. I. O. and A. F. of L.

Continental Oil Company last week was charged with dominating its employes and having discharged one man for his union activity. The charge was filed by the International Oil Workers Union, and was denied by the company.

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Allowable Picture

Improved conditions due to recent stock reductions may result in lifting of Texas Saturday shutdowns . . . Kansas governor threatens to leave compact

Lifting of Saturday shutdowns expected

Although July allowables for Texas fields will not become known until after the statewide hearing of the Texas Railroad Commission at Austin June 20, it is indicated strongly that the Saturday shutdowns, in effect in recent weeks in addition to the Sunday closings, will be lifted on most areas of the state.

This was hinted by both C. V. Terrill, chairman, and E. O. Thompson, member, who together constitute a majority of the commission.

East Texas Situation

There is some indication, however, that the East Texas field may not get relief, although most of the anti-Saturday shutdown agitation is arising from that area.

The railroad commission's Kilgore proration bureau has reported that the East Texas field on June 13 had 25,204 producing wells, with a base allowable of 510,246 barrels daily. On the same date the field had 76 dead and 52 off-production wells not included in the above total. The base allowable indicates what the restoration of Saturday or Saturday-and-Sunday production would mean from the standpoint of takings by the purchasing companies.

The market for East Texas crude has not stiffened materially, except to cause some companies to make adjustments with others to overcome loss of 2/7 of normal runs. For example, one large buyer contracted to deliver another 3500 barrels of East Texas crude daily for 60 days, while in return, the other is taking some West Texas crude not wanted by the first company. In that case, the first company wanted to increase its East Texas supply and cut its West Texas takings, while just the opposite was desired by the second company.

North and West Texas

Some observers anticipate that the Texas Panhandle, West Texas, West Central Texas, and all of North Texas are in line for 6-day production weeks in July.

Restoration of the K-M-A deep area to a six-day week production schedule along with other fields was considered a certainty by operators as a sequel to the slash in the base allowable per well from 42 to 36 barrels daily effective June 16. Abandonment of the Saturday shutdowns on production will enable wells to produce 216 barrels weekly as compared to 210 barrels under the 5-day week and 42-barrel allowable. The revised proration schedule lists approximately 500 wells, and those bottomed below the 4000-level have an allowable of 41 barrels, while the second well on a 20-acre unit has a base allowable of 27.9 barrels daily as compared to 31.5 barrels during the fore part of June.

Stripper Leases Exempt

Lifting of Saturday shutdowns would not be felt appreciably on North and West Central Texas stripper well leases, as nearly all of those are exempt by claims of water production, air lift, repressuring and water flooding.

Many exceptions have been granted by the railroad commission, particularly in Gulf Coast fields, for the above and other reasons.

Talco and Sulphur Bluff, eastern Texas heavy oil fields, still are riding the wave of popularity, due to the shutting off of Mexican supplies of asphaltic crudes. Pipe lines and refineries in the two areas are unable to supply all the demand from large companies that specialize in asphalt products. Consequently, those two fields may be exempt from Saturday closings.

Commissioners Elated

Because conditions were so materially improved, Railroad Commission Chairman C. V. Terrell issued the following statement last week:

"Reports just released indicate continued steadiness in the position of the oil industry during the past few weeks. Policies of strict production control have brought about a 5,564,000 barrels reduction in crude stocks since April 30 of this year, and gasoline is being withdrawn from storage steadily.

"The most encouraging recent development has been the 45,000 barrel reduction in the daily average amount of crude oil run to stills effected by refineries during the week ending June 4.

"As a result of this cut, runs to stills have dropped below actual production for the first time in several weeks. And if this favorable trend should continue for any length of time, a substantial reduction in gasoline stocks, which are still 13 percent higher than last year, will be achieved, and the outlook for the industry during coming months will be enhanced considerably.

"Such a condition, leading to additional improvement in the oil industry's position and a much needed breathing spell for producers, is certainly desirable, and I can now see no reason why we cannot safely lift the Saturday shut-down for July, and feel sure we will."

Commissioner Ernest Thompson had previously stated that he believed the industry could be relieved of its restrictions because of better conditions, and it appeared likely that the Saturday shutdown would be lifted during the next two months.

Whether the increase would include abandonment of the Sunday shutdown seemed doubtful, but this may also take place. Thus operators are likely to have two or three months of higher production during the summer, but it appeared that with the number of wells constantly increasing and the general depressed condition of business that the gasoline and fuel oil market is unlikely to expand during the fall sufficiently to care for the higher production that will take place during the summer. For these reasons resumption of the weekly shutdown in the fall and winter seems certain.

Kansas threatens withdrawal from Interstate Compact

Withdrawal of Kansas from the Interstate Oil Compact Commission has been threatened by Walter A. Huxman, Kansas governor. His statement at Topeka June 14 classed the compact as "a useless body," and added:

"It has no power and thus could not enforce any orders to help the oil marketing situation. The commission could not settle any disputes between states if it wanted to."

His expression was the first statement since his appearance before the quarterly meeting of the commission at Wichita, April 28, when he criticized the compact for its lack of authority to deal with markets as potential totals shift between the states. Then he cited the growth of the potential output of Kansas against its slight change in market outlet.

At that time he warned of federal control and admitted that he would favor it in case of a crisis in the petroleum industry. Later he went to Washington and consulted with the United States Bureau of Mines to see what could be done toward gaining higher allowable.

Recently the Kansas Corporation Commission removed proration restrictions in the Caldwell pool, part of which is in Sumner County, Kansas, and part in Grant County, Oklahoma. Two weeks ago three crude oil purchasers in Kansas were cited to appear before the corporation commission to show cause whey they have failed to purchase the full allowables from leases to which their lines are connected. They contended that they were under no compulsion to buy oil in excess of their needs and therefore could take oil in any quantity not to exceed the allowable of the commission.

Court Restrains Enforcement

Last week the district court at Winfield granted an injunction by which the corporation commission was restrained from enforcing an order limiting output of the Hittle pool, Cowley County, to 31 barrels a day, after W. H. McNabb, part owner of the one well in the field, introduced evidence to show a market for more oil. Kanotex Refining Company, Arkansas City, whose 25-cent crude price cut in May resulted in loss of numerous well connections is taking the oil from the Hittle well.

Attitude of the Kansas governor toward the Interstate Oil Compact Commission is considered but a reflection of the attitude of Kansas oil producers

toward proration as compared between states. Kansas has built a high potential, in excess of the 3,000,000 barrels, from which it is producing around 150,000 barrels daily.

Commission called into court over allowable

The Oklahoma Corporation Commission was compelled to submit its side of litigation with Natural Gas Development Company through evidence by three federal judges, who sat at the hearing in Oklahoma City June 13. The court named a commissioner who will take evidence.

The case was taken into federal court by the plaintiff as an attack on the minimum allowable order of the corporation commission in the Oklahoma City field. The plaintiff company operates 13 wells, from which it contends that it has been deprived of 641,000 barrels of oil because of the nature of proration orders. The contention is that a well on minimum allowable basis, now 190 barrels daily, may have an output many times in excess of the percentage output of a well producing on percentage of potential.

The commission was criticized by A. P. Murrah, one of the judges, for sitting as a court to determine the legality of its own orders.

Oklahoma City marginal allowable reduction wanted

Committee of producers has recommended reduction of marginal well allowable in Wilcox zone of Oklahoma City be reduced to 165 barrels daily and that all rules in conflict with that be rescinded by the Oklahoma Corporation Commission. Recommendation provides that wells capable of producing more oil have percentage output for the excess.

Proration hearing for Oklahoma fields will be held in Oklahoma City June 29.

Kansas allowable cut in three fields

Kansas Corporation Commission June 16 reduced allowables in all fields where 3 purchasers take oil by amounts equal to pipe line proration enforced by these purchasers. Amounts vary from 5 to 15 percent. Regulation is retroactive to June 1. Action follows citation June 2 when Sinclair Prairie Oil Marketing Company, Stanolind Crude Oil Purchasing Company and Phillips Petroleum Company appeared before the commission to show cause why they should not take all oil as specified by proration orders.

Proration Suit Filed

Suit to restrain Kansas commission from enforcing its allowable order in Weathered pool, Cowley County, has been filed by Earl F. Wakefield. His plea for injunction is that a market exists for all production in this field of two wells. Similar order was granted last week in behalf of output of the Hittle pool.

Oil at the Capitols

Adjournment of Congress kills off-shore title and divorce bills . . . Only oil measure passed during session provided for naval reserve consolidation

Congress adjourns with only one oil bill passed in session

Adjournment of Congress June 16 brought to an end a session in which much oil legislation was discussed but only one bill enacted.

Barring the calling of a special session in November to discuss railroad relief—already under consideration—all the oil bills pending at the end of the session are dead and, if their enactment is still desired next year, must be reintroduced as new measures.

Three bills of major importance to the industry were pushed during the session, but all but one met an untimely fate as Congress adjourned without action on them. A last minute effort to secure House consideration of the Senate approved measure for consolidation of the naval reserves succeeded, but the bill to divorce marketing from other branches of the industry died in committee, and the measure to vest title in the California off-shore oil fields in the government was stranded on the House calendar.

Indirect Bills Passed

While the oil industry thus escaped the burden of direct legislation, it was, of course, affected in common with other interests by general measures enacted, such as the new revenue act, wage-hour bill and the O'Mahoney monopoly probe resolution.

Under the revenue legislation, the very small units in the industry are relieved of the burden of the undistributed profits tax, which was lifted from corporations with income not exceeding $25,000 and lightened with respect to larger corporations. The capital gains tax provisions also were rewritten in such way as to make them less onerous in many cases.

The wage-hour bill is not expected materially to affect the production branch of the industry, but the lowest paid labor in the other branches may be aided by the minimum wage and maximum hour standards which eventually will become effective. Initially, the minimum wage will be 25 cents per hour, to be raised in a year to 30 cents, after which time an industry committee will be set up to fix the minima for the various classes of workers at rates which may not exceed 40 cents an hour. The maximum work week will be 44 hours, eventually to reach 40 hours.

The joint Congressional executive committee, which is to make a study of monopoly in industry generally under the O'Mahoney resolution, will, it is fully expected, delve into conditions in the oil industry. This is foreseen by reason of the fact that among the 6 government agencies to be represented on the committee will be the Department of Justice, whose complete monopoly files probably will be made available.

Walsh Bill Passed

An objection by Representative Phillips of Connecticut almost prevented last minute consideration of the Walsh bill for consolidation of the naval oil reserves.

Passed by the Senate in April, 1937, the bill lay dormant in the files of the House Naval Affairs Committee until 10 days before the end of the session, when it was suddenly called up for hearings as a result of intimations by President Roosevelt that he desired its enactment.

The hearings were marked by objections by Representative Phillips to consideration of any legislation which in any way might be construed as depriving the federal government of its rights to the lands in the naval reserves, which he contended had been leased illegally by former Secretary of the Interior Fall.

Despite his objections, the committee reported the bill favorably, but Chairman Vinson was unable to secure approval of the rules committee to an order for its consideration, and made a final effort to bring it up by unanimous consent, in which he was at first thwarted by the Connecticut Congressman. Phillips, however, later relented and the measure was passed.

Off-Shore Title Unsettled

The Nye resolution for seizure by the government of the California offshore oil fields died on the House calendar after a stormy career. Introduced originally by the North Dakota senator as a vehicle for action by the attorney general to test the government's claim to title and passed by the Senate last August, the legislation ran into trouble when taken up by the House Judiciary Committee at hearings this February.

At the instigation of Representative Hobbs of Alabama, the measure was rewritten to claim federal title to all off-shore lands, and in that form aroused the opposition of the Gulf oil states as well as officials of Eastern states where the underwater lands were being used for recreation purposes.

The resolution was again rewritten so as to claim title for the government only to the oil underlying the California lands, and in that form was favorably reported to the House May 19. Suddenly awakening to the danger of losing the oil, California interests got busy, a delegation came to Washington. Representative Dockweiler in-

troduced a bill vesting title in the State of California, and the legislation dropped out of sight.

The third oil bill to fail of action was the Gillette-Biermann bill to divorce marketing from other branches of the industry. The subjects of extensive hearings before a Senate Judiciary Subcommittee, the bill was dropped when, as a result of suggestions that it might not be constitutional, the attorney general was asked for an opinion on that point and refused to give one.

As the session came to an end there were pending in committee files a large number of oil bills to which no consideration had ever been given, the usual fate of the great majority of the 15,000 measures dropped into the bill hoppers of Congress each session.

California regulation bill now in effect

Because of failure of those opposing the bill to obtain the required 116,487 signatures to carry it before the voters on a referendum in November, the newly passed Robertson oil bill, designed to regulate the production of oil in the state-owned tideland oil fields is now in effect and it is expected that machinery to operate the bill will be set up at once.

Under the bill a commission, composed of three members, the state controller, lieutenant-governor and director of finance, will have charge of leasing and setting the royalty which the state will obtain from such leasing.

The Olson bill, providing for the state a fixed royalty of a minimum of 30 percent on all wells with a production in excess of 200 barrels daily, is held up because of referendum. Observers say that all the state tidelands can be leased and be ready for operation before the bill can finally become a law, which indicates that there will be little or no conflict of the two bills.

The Robertson oil bill, a compromise, after 20 years of struggle to obtain a suitable measure, is far reaching in its scope and reserves to the state all the oil, gas, oil shale, coal, phosphate, gold, silver and all other mineral deposits in the tidelands, and the deposits can be disposed of only on a rental or royalty basis. The new commission has sole authority to issue prospecting permits and sign royalty contracts for the state of California.

Proceeds from such royalty contracts go into a general fund, after deduction of costs and necessary administration expenses, and after payment to the school fund of all revenues produced from school lands, 30 percent of the state's share will go into a fund for the buying and maintaining of parks.

Federal leasing rule is clarified

An important statement was issued recently by Fred W. Johnson, Commissioner of the General Land Office, Washington, D. C. In answer to a query by Robert N. Ogden, Casper attorney, Johnson wrote:

"While a case has not yet come before the Department for decision, there appears to be no reason to doubt that the rule adopted with reference to permit applications will be applied, and that a lease without competitive bidding will be issued to such applicant, notwithstanding that the land, after the application was filed and before a lease is issued, is proved to be within a known producing structure."

Considerable doubt had existed among many companies and individuals making application for oil and gas leases on the public domain under the O'Mahoney-Greever amendment whether the lands applied for would be thrown into competive bidding should a discovery be made in the area of the lands placing them within a designated structure after application had been made, but before lease had been granted.

Pennsylvania may revoke four gas companies' permits

Four gas companies are among 670 companies and individuals ordered by the Pennsylvania public utility commission last week to show cause why their certificates of public convenience should not be revoked and cancelled for failure to file with the commission annual reports for 1937.

No heed was paid by those cited to repeated requests that the reports be filed, the commission said. It is the first time this action has been taken by a Pennsylvania utility regulating commission for violating this requirement, and establishes a precedent in commission annals with respect to the large number of rules issued at any one time.

Illinois oil regulation and tax bill introduced

With the approval of the state administration Representative James Boyle, Chicago Democrat, introduced in the Illinois legislature June 14 three measures for the taxation and regulation of the state's oil producing industry. Boyle is a member of the Illinois Budgetary Commission which recently toured the oil fields.

First of the three measures would impose a severance tax of 2½ percent on all oil and natural gas production, the estimated $400,000 proceeds to be turned into the state's general fund. Authority would be given to the Illinois Commerce Commission by the other two bills to draw up regulations for control of oil and gas production in the interest of conservation.

Introduction of the bills brought an attack in the house from Representative Palmer, West Frankfort Republican, who countered with a joint resolution providing that no prorating of Illinois oil production be made by the state until production at least equals consumption. He declared that as long as consumption of petroleum products was under production, every effort should be made to encourage production.

Introduction of the oil measures in the legislature closely followed a meeting of oil operators and civic group representatives held in Flora at which a resolution was passed protesting any possible proration provisions in any oil conservation laws that might be

Labor Situation

Oil Workers Union proposes "labor peace" at annual convention, which goes on record opposing proration

C.I.O. delegates accept proposals

At the close of the convention of the Oil Workers International Union (C.I.O. affiliate) in Houston, June 11, a proposed "national labor peace office" was indorsed unanimously, and a decision was made to move headquarters for its 80,000 members from Washington, D. C., to Fort Worth, Texas. Another resolution, passed with little discussion, opposed state proration laws for the oil industry and recommended ammendment of the Connally hot oil act so as to remove its application from any state law or laws that do not adequately protect labor.

Union charges Continental with dominating employes

Charges were filed last week by a local chapter of the International Oil Workers Union against Continental Oil Company, Ponca City. The hearing is on complaints by the union that the company formed and dominated the company's employes and discharged one man for outside union activity. In the first ruling in the case, E. R. Strempel, trial examiner of Washington, gave the independent union permission to intervene, but limited its testimony strictly to the complaint concerning domination of the independent union.

In its answer to the union's complaints, the company declared it had nothing to do with formation of the independent union after the Wagner act was declared constitutional, and that one employe was discharged merely for failure to do his work satisfactorily. Testimony of several witnesses was concerned with employes' meetings held after validation of the Wagner act has ruled out the old employe-management council composed of nine employes' representatives and nine from the manegement.

Crews leave rig after C.I.O. visit

Construction crews left two oil well rigs last week after being visited by a group of 40 members of the C.I.O. Oil Workers International Union. The union men went to a Sun Oil Company well near Goose Creek, Texas, and the 11 men building the rig walked off the job peaceably after the union men demanded that they join the union. The same procedure was used at a well near Fairbanks, Texas. Both rigs were being constructed by Hester Brothers.

enacted by the present special session of the legislature. Copies of the resolution were sent to the governor and Lieutenant governor, as well as all members of the legislature. Thirty central and southern Illinois communities were represented at the meeting.

Meanwhile, the state's handling of the oil question was projected into the current political campaign by Richard J. Lyons, Republican candidate for United States senate, who, while speaking in both Flora and Olney last week, attacked the "tax hawks of the Horner administration" who "were upon you to count each barrel and prepare a program for taxing your little business as soon as the drills had released the trickle of black fluid from the earth."

"The New Deal administration, not only at Washington but right here in our own state of Illinois, appears to be opposed to anything which may mean work and jobs for the people," Lyons declared. "For the first time in many years, Richland, Wayne and Clay counties, as a result of the discovery of the God-given oil, have had no relief problem.

West Virginia gas sales revision hearing held

A revision of rules for sale of natural gas in West Virginia is suggested by a hearing which the public service commission called last week for June 20 at Charleston. Background for the hearing will be a study conducted under the direction of Paul Price, Morgantown, state geologist, which revealed a wide difference in the British thermal unit content of natural gas sold within the state.

The commission has ordered all state gas companies to file information on the following subjects: Number of cubic feet of natural gas from which gas companies extracted gasoline over the most recent 12-month period, amount in gallons of gasoline so extracted, the B. T. U. content of natural gas before and after gasoline extraction, and similar information regarding extraction of other heating constituents from natural gas either produced or purchased by the reporting company.

Suggested revision of rules and practices governing sale of natural gas for presentation to the commission before the hearing were being drawn by commission engineers. Present regulations were placed in effect September 1, 1927.

Better markets reflected in Oklahoma refineries

Additional strengthening of the markets for refined products in the Mid-Continent was evidenced last week in announcement of new plans at two refineries.

Barnsdall Refining Corporation at the middle of the week resumed operation of the lubricating and bright stock department of its plant at Barnsdall, Osage County, Oklahoma. In that connection, nearly 100 men returned to work. The department had been closed since the beginning of this year.

About the same time, Sinclair Refining Company announced that it had indefinitely postponed the formerly scheduled shutdown of its plant at Sand Springs, Oklahoma, although a two weeks vacation period shutdown will be made in July.

Market Situation

Pennsylvania crude oil postings reduced 25 cents a barrel, but Mid-Continent gasoline prices are further improved as stocks continue to decline

Situation is featured by stronger gasoline market

Although marred by the 25-cent reduction of Pennsylvania grade crude postings, the oil industry's general market situation last week continued comparatively favorable; the Pennsylvania situation having been compensated by some additional improvement in the gasoline market in the Mid-Continent.

Pennsylvania Crude Cut

The Pennsylvania crude cut was generally attributed to a local unfavorable situation rather than to national conditions.

It was pointed out that crude production in the Pennsylvania grade fields had continued relatively large, in the face of curtailed refinery runs. The slower refinery activity has arisen out of lagging demand for lubricants in industry rather than from any material change in the demand for motor vehicles.

The National Petroleum Association has reported that stocks of Pennsylvania grade crudes at the close of April were more than 750,000 barrels larger than one year previously. Crude runs to refinery stills in the area in the week ended June 4 averaged 57,627 barrels daily, as compared with 75,304 barrels daily the previous week, the report indicated.

Fifth Cut in Year

The Pennsylvania grade price reduction was made effective June 13. That was the fifth cut since June 7, 1937, and it brought postings down from $1.02 to $1.12 a barrel below the prices in effect a year ago. The last previous change was a reduction of 15 to 17 cents a barrel made March 7 this year. The present top price in the region is $1.80, the posting for the Bradford-Alleghany district.

The new price for oil in National Transit lines is $1.73 a barrel, that for Southwest Pennsylvania is $1.46, for Eureka lines of West Virginia $1.40, and for purchases by Buckeye lines, Macksburg, Ohio, $1.30 a barrel.

Effective June 16, the price of Corning grade crude oil in Buckeye Pipe Line Company's system was reduced 10 cents, or to $1.17 a barrel.

The gasoline tank car market in the

Trends of United States Production and Stocks

Figures are from American Petroleum Institute weekly reports, except those on crude stocks, which are from Bureau of Mines weekly reports

WEEK ENDED	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	Gas & Fuel Oil Stocks (Barrels)
May 29, 1937	3,573,000	3,245,000	306,445,000	78,758,000	96,139,000
June 26	3,529,600	3,235,000	307,679,000	75,427,000	100,395,000
July 31	3,591,900	3,425,000	308,250,000	70,872,000	108,209,000
August 29	*3,731,450	3,425,000	309,506,000	66,997,000	112,111,000
September 25	3,666,300	*3,455,000	307,974,000	65,620,000	116,472,000
October 2	3,647,450	3,400,000	309,036,000	65,266,000	117,076,000
October 30	3,602,950	3,345,000	307,140,000	66,836,000	121,070,000
November 27	3,425,800	3,325,000	304,156,000	68,544,000	121,616,000
December 25	3,492,600	3,245,000	303,294,000	74,437,000	118,659,000
January 1, 1938	3,436,600	3,320,000	303,468,000	77,291,000	118,660,000
January 29	3,357,650	3,170,000	304,286,000	84,844,000	118,793,000
February 26	3,322,800	3,170,000	305,167,000	90,719,000	120,958,000
March 19	3,322,550	3,080,000	306,380,000	*93,192,000	122,067,000
March 26	3,405,600	3,080,000	307,557,000	92,858,000	122,979,000
April 30	3,396,150	3,215,000	307,147,000	91,339,000	128,270,000
May 28	3,098,650	3,150,000	301,583,000	87,946,000	134,315,000
June 4, 1938	3,107,950	3,105,000	298,266,000	87,767,000	134,632,000
June 11, 1938	3,131,500	3,155,000	.....	86,149,000	136,097,000
June 12, 1937	3,515,900	3,250,000	†307,223,000	76,996,000	98,158,000
Change in past year	—10.9%	—2.9%	—2.9%	+11.8%	+38.6%

* All time peak. † Stocks, June 5, 1937.

Mid-Continent last week was maintaining the strength that it had developed in the several preceding weeks.

Prices now are generally ⅛ to ¼ cent a gallon higher than a week ago, in both the Oklahoma - Kansas and Chicago markets, and the market in the East Texas refining district continues firm.

The gasoline market is being bolstered by the effective curtailment of crude production and refinery runs, as the strict control is bringing about needed withdrawals from excessive gasoline storage.

The stocks of gasoline came down about 1,500,000 barrels in the week ended June 11, and then stood only 11.8 percent higher than one year previously. The stocks heretofore have not compared that favorably with a year ago.

Fuel Oil Situation

The fuel oil situation continues to offer season for some anxiety. The fuel oil inventories are far too high, in relation to the current trends of demand. But in the week of June 11 they further increased about 1,500,000 barrels, and then were 38.6 percent larger than one year before.

Crude cut and gasoline gains among price changes

Prices in the oil industry were featured during the past week by the reduction of 25 cents a barrel in Pennsylvania grade crude oil and, in contrast, further improvement in gasoline tank car quotations.

Aside from gains for gasoline, prices of the refined products were generally unchanged, although the heavier fuel oils sagged a little further.

The tank car prices of gasoline in effect late last week were generally from ⅛ to ¼ cent a gallon higher than one week previously, in both the Oklahoma-Kansas and the Chicago markets.

Natural Gasoline

Natural gasoline, grade 26-70, was priced generally in the Mid-Continent markets f.o.b. refineries at 2⅛ cents a gallon, and sales were reported at 2 cents f.o.b. Breckenridge, Texas.

Gasoline at Refineries

U. S. motor gasoline ranged in the Oklahoma market last week about as follows: 62 octane and below, 4½ to 4¾ cents a gallon; 63 to 66 octane, 4¾ to 4⅞ cents; 67 to 69 octane, 5 to 5¼ cents; 70 to 72 octane, 5¼ to 5½ cents.

Corresponding prices in the Chicago markets were: 4⅜ to 4⅝ cents, 4½ to 4¾ cents, 4⅞ to 5⅛ cents, and 5 to 5¼ cents.

In East Texas the most common gasoline, 60-62, 400 end point, was priced generally around 4½ cents a gallon.

Kerosene prices f.o.b. Oklahoma refineries ranged from 4⅛ to 4¼ cents a gallon for the 41-43 water white grade, and from 4⅜ to 4½ cents for the 43-44 water white grade; and corresponding prices in the Chicago market were 4 to 4¼ cents and 4⅛ to 4½ cents.

Fuel oil prices were generally the same as in the previous week. In the Chicago market range oil was priced from 3¾ to 3⅞ cents a gallon. The No. 1 white oil was priced from 3⅝ to 3⅞ cents and No. 1 straw from 3⅜ to 3¾ cents. No. 2 straw was 3¼ to 3½ cents. No. 3 oil was 3 to 3¼ cents. No. 4 was $1.05 to $1.10 a barrel to domestic consumers and 90 cents to $1.05 to industrial buyers. No. 5 oils were 65 to 75 cents for domestic and 55 to 65 cents for industrial sales. The No. 6 oil was quoted to the usual industrial customers at 35 to 50 cents a barrel.

Pennsylvania crude gets fifth reduction

Pennsylvania grade crude oil prices dropped 25 cents a barrel in all districts, effective June 13, bringing quotations to the lowest point in five years. It was the fifth successive price reduction since September 1, 1937, the previous quotation change having been made March 7. The new quotations were announced simultaneously by the Seep Purchasing Agency of the South Penn Oil Company, Pennzoil Company, Cities Service Company, Valvoline Pipe Line Company and Pure Oil Company. They are:

In the Bradford-Allegany district, $1.80 a barrel; in the Oil City-Titusville district, $1.73 a barrel; in Group A, including Cochran, Franklin, Hamilton and Doolittle districts, $1.73; Group B, Titusville district, $1.72; Group C, including Turkey and Tidioute districts, $1.71; Group D, including Bear Creek and Porkey districts, $1.70; Group E, including Eideneau, Bull Creek, Rough Run, Carbon, Dipner, Bredin, McJunkin, Jameson, Kennerdell, Emlenton, Tiona, Lack and Kinzua districts, $1.68; Southwest Pennsylvania, $1.46; Eureka lines and West Virginia stations of Pure Oil Company, $1.40, and Buckeye lines, $1.30. Corning grade remained unchanged at $1.27 a barrel.

In view of the mounting stocks of crude, a large accumulation of refined products and drastically lowered prices for lubricating oil stocks, last week's price cut was not unexpected. A curtailment program in effect in the Allegany field since last fall and cuts in acceptances down to 75 percent throughout the Bradford field have not been sufficient to match the reduction in runs to stills. Production of Pennsylvania grade crude during the first four months more than equalled the corresponding period of 1937, despite the reduced demand evidenced this year.

CRUDE OIL PRICES

Crude oil prices were reduced 25 cents a barrel in the Pennsylvania grade fields effective June 13. New prices apper in an accompnying story. Prices in other fields remain as shown in the issue of June 6, pages 66 and 68. The full table is presented only in the first issue of each month.

Latest statistics give further encouragement

The latest available statistics revealed that the oil industry was maintaining a comparatively good position with respect to inventories and current operations.

Under the strict allowables prevailing this month, crude oil production for the United States is running at relatively low levels, and refinery runs continue moderate. Consequently, needed withdrawals from storage of both crude oil and gasoline are being effected.

Crude Production Low

United States crude oil production in the week ended June 11 averaged 3,131,500 barrels daily, which was about 25,000 barrels a day more than in the previous week but 10.9 percent less than in the corresponding week last year.

Crude oil runs to stills in the week of June 11 averaged 3,155,000 barrels daily, an increase of 50,000 barrels over

the level of the previous week but 2.9 percent less than in the comparable week of 1937.

Stocks Are Lowered

Under the influence of curtailed crude production and the relatively low levels of refinery output, gasoline storage was reduced more than 1,500,000 barrels in the week ended June 11, coming down to 86,149,000 barrels. At that level, the gasoline stocks were 11.8 percent larger than those held one year before.

This represented further improvement in the gasoline inventory situation. On June 4 the gasoline stocks on hand were 13.2 percent larger than one year previously.

On the other hand, there was a little loss of ground by the industry with regard to fuel stocks in the week of June 11. The total supply of gas and fuel oil in the United States increased approximately 1,500,000 barrels during the week, rising to 136,097,000 barrels. That new level was 38.6 percent higher than the comparable one last year, when only 98,158,000 barrels were held.

The strict curtailment of production continues to result in substantial withdrawals of crude oil from storage. An unusually large decrease of 2,720,000 barrels occurred in the week ended June 4, when stocks in the United States dropped to 298,266,000 barrels. At that level, the crude inventories were 2.9 percent lower than on the comparable date last year.

Crude Production

Nation's output rises to 3,152,975 barrels daily; despite a decline of 30,550 barrels in Oklahoma.

United States crude oil production rose further during the week ended June 18, averaging 3,152,975 barrels daily, which, however, was still considerably less than the Bureau of Mines recommendation for the month of June.

Higher production resulted from gains in California, Kansas, Louisiana and Texas, which outweighed a considerable decline in Oklahoma.

California Higher

California output was 10,400 barrels a day higher than in the previous week, averaging 680,400 barrels daily, which was 30,400 barrels a day more than the Bureau of Mines recommendation and 60,400 barrels more than the recommendation of the Central Committee of California Oil Producers.

Kansas last week averaged 169,550 barrels a day, 26,905 more than in the previous week, 2750 barrels less than the federal allocation and 9550 barrels more than the state allowable.

Louisiana production was up 4600 barrels above the previous week's level, in averaging 261,775 barrels a day, which was 11,775 barrels a day more than the Bureau of Mines recommendation and 11,300 barrels more than the allowable prescribed by the state.

Texas showed a gain of 850 barrels, having averaged 1,194,700 barrels a day, which was 134,600 barrels less than the estimated demand and 34,987 barrels more than the state allowable.

Big Oklahoma Drop

Oklahoma had a decline of 30,550 barrels, averaging 445,200 barrels a day, which was 63,100 barrels below the Bureau of Mines estimate and 40,200 barrels above the state allowable.

United States Crude Oil Production

Estimates Compiled by The OIL WEEKLY

District or State	Bureau of Mines Recommendation (Daily in June)	State Allowable in June	BARRELS DAILY FOR WEEK ENDED June 18	June 11
TEXAS—				
Texas Panhandle			57,500	62,050
North Texas			73,900	74,500
West Central Texas			28,100	27,800
West Texas			181,200	179,300
East Central Texas			95,600	94,100
East Texas Field			365,100	364,900
South Texas			206,100	204,900
Texas Gulf Coast			187,200	186,300
Total Texas	1,329,300	1,159,713†	1,194,700	1,193,850
CALIFORNIA—				
Long Beach			59,400	58,600
Santa Fe Springs			33,400	35,700
Huntington Beach			33,700	34,200
Dominguez			27,400	27,700
Ventura Avenue			34,800	36,000
Midway-Sunset			67,900	51,400
Kettleman Hills			69,200	68,600
Wilmington			91,700	94,400
Others			262,900	264,200
Total California	650,000	620,000*	680,400	670,000
OKLAHOMA—				
Oklahoma City			106,100	119,500
Seminole Area			97,075	104,125
Fitts			40,100	42,625
Others			201,925	209,500
Total Oklahoma	508,300	405,000	445,200	475,750
Louisiana—				
North Louisiana			80,875	77,875
South Louisiana			180,900	179,300
Total Louisiana	250,000	250,475	261,775	257,175

District or State	Bureau of Mines Recommendation (Daily in June)	State Allowable in June	BARRELS DAILY FOR WEEK ENDED June 18	June 11
KANSAS—				
Burrton-Haven			10,350	10,000
Russell County			27,100	23,425
Silica			11,025	10,405
Others			121,075	98,815
Total Kansas	172,300	160,000	169,550	142,645
NEW MEXICO	108,300	91,000	90,500	90,800
MICHIGAN	54,000		55,700	53,800
ARKANSAS	48,300		42,950	42,275
MOUNTAIN STATES—				
Wyoming	49,700		51,300	51,450
Montana	12,700		14,500	14,300
Colorado	5,000		3,950	4,250
Total Mountain States—	67,400		69,750	70,000
EASTERN STATES—				
Pennsylvania Grade			76,300	77,200
Southern Illinois (New Pools)			28,900	29,600
Illinois-Indiana (Old Pools)			13,100	13,350
Others, Eastern			24,150	24,650
Total Eastern States	145,400		142,450	144,800
Total United States	3,333,300		3,152,975	3,141,095

† Daily average, considering Saturday and Sunday shut-downs.

* Recommendation of Central Committee of California Oil Producers.

Pipe Line News

Application for a 250-mile pipe line permit from Lance Creek to Denver features the week's projects.

Propose 250-mile outlet from Lance Creek to Denver

Application for a pipe line from the Lance Creek field, Wyoming's most active oil field, to Denver, Colorado, was filed the past week with the Colorado Public Utilities commission by the recently formed Delaware incorporation, Cilebur Corporation, principals of which are undisclosed.

The pipe line, according to the information filed in the application, is to cost $3,000,000 and will consist of seamless pipe welded at the ends. Distance by pipe line route from Lance Creek to Denver is approximately 250 miles. Tariff will be 60 cents per barrel, and revenue is estimated at $400,000 annually with expenses at $75,000 per year.

Principals behind the proposed line are unknown. Norman E. Bradley is named president and his address given in the application, 1001 Midland Savings Building, Denver, is the law office of Barney E. Whatley and Walter E. Schwed.

Other than, "We'll have some announcements to make as soon as the Public Service Commission acts on our request," commented by Schwed, the firm made no statements on the line or its backers.

Denver officials of Continental Oil Company denied any connections with Cilebur Corporation or the proposed line. Continental, holding about one fourth of the producing acreage in Lance Creek, operates 1850 barrels daily through-put refinery at Denver.

Officials of Bay Petroleum Company, which operates a 1650-barrel capacity plant at Denver has been taking a little better than 1000 barrels daily, refused to comment on the line. Bay has been making its purchases through Minnelusa Oil Company and Argo Oil Corporation from Lance Creek.

Cilebur Corporation this week filed papers for domestication in the State of Wyoming with the office of the Secretary of State at Cheyenne.

Continental Oil Company maintains a 4-inch 19.8-mile line from Lance Creek to Manville, Wyoming, with loading racks on the Chicago & North Western, while the Illinois Pipe Line Company operates a 6-inch line from the field 65.5 miles south to Fort Laramie, Wyoming, station on the Stanolind Pipe Line Company's line from Teapot, Wyoming, to Freman, Missouri. Lance Creek is producing and marketing around 12,500 barrels of crude oil daily.

Three-mile Michigan gas line extension

A three-mile spur line connecting the village of Edmore, Montcalm County, Michigan, to the main line of the Consumers Power Company running from the Six Lakes field, in Montcalm and Mecosta Counties, will be constructed if voters of the village on July 18 approve a proposal to grant the Consumers company a franchise to supply natural gas. The Edmore council passed an ordinance last wek authorizing the franchise election.

20-mile Kansas line

Derby Oil Company, Wichita, has begun construction of 20 miles of 4-inch pipe line from the Robbins pool, Sedgwick County, to the Wellington pool, Sumner County, Kansas. The line will be connected to leases which have been restricted in output since Kanotex Refining Company, Arkansas City, reduced its posted price for crude oil May 10.

Construction of the line will allow delivery of oil from the Wellington pool to the Wichita refinery plant of Derby Oil Company. Recently the Kansas Corporation Commission removed proration restrictions in the Wellington pool to allow it to be produced ratably with wells in the same pool but in Oklahoma.

Pipe line for new Cooke County field

Authorization of a pipe line outlet for the new deep oil area uncovered in northeastern Cooke County, Texas, from the Deese (Strawn) sandy lime has been made by Sinclair Refining Company, Pipe Line Division. The company will build 12 miles of 4-inch line from a 5-car capacity rack site on the Santa Fe Railroad at Gainesville to Sinclair Prairie Oil Company's J. M. Best 1, in Thos. Toby Survey.

Mount Hope seeks natural gas supply

Three proposals are under consideration by the city council of Mount Hope, Kansas, for obtaining natural gas for distribution by the city. One calls for construction by Drillers Pipeline Company of a 12-mile line from the firm's wells in the Burrton field near Yoder. Another calls for construction of a line to the Burrton field on which the city would hold an option to purchase. The third calls for service by the Consolidated Gas Company, which has a line running within half a mile of the Mount Hope city limits.

Firms exempt from Wyoming transportation tax

District Judge Sam Thompson at Cheyenne last week ruled that companies transporting through their own facilities their own raw materials for use in products manufactured or produced by them are exempt from paying sales taxes on the transportation. The ruling came on an appeal by four oil companies from a Wyoming board of equalization ruling requiring them to pay a sales tax on material transported through their own pipelines.

Companies who appealed the ruling were Midwest Oil Company, Mountain Producers Corporation, Argo Oil Corporation and Stanolind Oil & Gas Company.

New subsidiary takes over Stanolind purchasing in Texas

Standard Oil Company of Indiana has organized another subsidiary, Stanolind Oil Purchasing Company, which will take over connections of Stanolind Crude Oil Purchasing Company in Texas. The company's statement follows:

"To simplify and localize crude purchasing operations in the Gulf Coast states the Standard Oil Company of Indiana has organized a new subsidiary, the Stanolind Oil Purchasing Company, The new company will acquire the oil in storage and other physical facilities of the Stanolind Crude Oil Purchasing Company now in the State of Texas. Thereafter it will purchase oil from the Stanolind connections and otherwise carry on the business which has been handled by Stanolind Crude Oil Purchasing Company in the Gulf Coast states area. Stanolind Crude Oil Purchasing Company will discharge all obligations and retire from that territory.

"The head office of the new company is to be at Tulsa, Oklahoma, and its Texas office will be at Houston. Officers will be the same as Stanolind Crude Oil Purchasing Company with R. S. Ellison as president and Ralph O. Dietler as vice president."

Texas commission may revise its forms

The Texas Railroad Commission has scheduled a hearing for July 5 at Austin to consider revision of a portion of the forms it requires from operators. At that meeting only those forms on which natural gas and gasoline plant operations are reported will be considered. They are listed below:

EH-4A and EH-4B, pertaining to gasoline plant operations.

SW-6 pertaining to tender operations.

GO-1, producers report of condensate and/or crude oil produced from gas wells.

2-266A and 3-266B, combined monthly report on gas wells and gas pipe lines.

Form, application for permit to commingle gas in a natural gasoline plant.

1-407, pertaining to residue disposition for gasoline plants at which gas is commingled.

The Forms Committee working on these particular reports has recommended only one material change. They have suggested that the commission prepare all forms on standard legal size paper which will fit in standard typewriters and that the reports be made out vertically which will eliminate the use of long-carriage machines.

FIELD DEVELOPMENT HIGHLIGHTS

Illinois

FIRST Devonian oil production in the Illinois Basin was put on record during the week when small production was obtained at 4316-36 feet in a Clay County wildcat. In Decker Township, Richland County, another isolated test flowed 75 barrels in 20 minutes from 2 feet of McClosky. An offset to the recently completed discovery well of North Olney pool flowed 1407 barrels initially—another made 1000 barrels in 16 hours. Beecher City field of Fayette County was extended 2 miles southwest.

Birk City field, Henderson County, Kentucky, got a minor extension. Allegany County, New York, got a new Oriskany sand gas field.

Oklahoma-Kansas

Showings in two central Oklahoma wildcats, one in Seminole County and the other in Hughes County, indicated possible small pools last week.

One new field in Russell County and small Wilcox sand production in Barber County were the significant developments in Kansas. Swabbing tests in a Finney County wildcat were encouraging enough to warrant putting the well on a pump.

Wyoming

West Shawnee Creek, recently discovered shallow pool in Converse County, was extended a mile east. A new light oil reserve was opened 13 miles north of Casper by a well producing from Lakota sand at 8013 feet. Beaver Creek prospect was converted into a gas field, production coming from Morrison formation.

Wells near production limits of Buckner field, Lafayette County, and Schuler field, Union County, Arkansas, indicated extensions for each.

California

Labelled as a dry hole a year ago at 7800 feet, a well in Greeley field was deepened to 11,520 feet and brought in for an estimated initial production of 15,000 barrels. It was choked back.

Extension of New Mexico's Vacuum field 2½ miles northeast of the east extension area assures prolonged development; wildcats northwest and west of the field also are showing for production. A well failing to find oil in drilling to the water level might define Vacuum to the southeast. A second well was completed in the Langlie sandy lime area for 72 barrels in 13 hours.

North Texas

A Kadane sand sector extension for K-M-A exceeded expectations when it flowed 108 barrels in 3 hours. Southeast of Chalk Hill field, Archer County, a test showed some saturation in sand and shale at 3647 feet.

In the Texas Gulf Coast, Dickinson field, Galveston County, was extended 2500 feet east by one well and 4500 feet southeast by another. Cedar Point field, Chambers County, got its first failure. Several important wildcats were abandoned.

South Louisiana

Jefferson Island salt dome, Iberia Parish, got its first commercial oil production when a northeast flank test flowed 500 barrels of 37.2 gravity oil. In the same parish it looks as though the Fausse Point prospect might be converted into an oil field soon, a well showing 1,000,000 cubic feet of gas and 35 barrels of fluid, mostly oil. Lafitte field in Jefferson Parish was extended by an 862-barrel well.

Southwest Texas

A new basal Jackson gas pool was opened 14 miles north of Rio Grande City, swabbing 2 barrels per hour, a Caldwell County wildcat near Lytton Springs indicated a new shallow oil field. Eleven miles southwest of Ben Bolt, Jim Wells County, a wildcat is trying to blow out from Vicksburg at 6390 feet. Three miles northeast of East White Point, San Patricio County, a wildcat is testing at 5297 feet to open a new Frio pool. Fitzsimmons pool in Duval County got a new Hockleyensis sand.

Comparison of Permits Granted for New Wells

STATE	Week Ending June 18	Total this Mo.	Total this Year	Total this Date Last Year	1937 Year Total
Arkansas	5	15	108	89	240
California	17	57	583	741	1,584
Louisiana	28	107	611	572	1,227
Kansas	34	78	752	1,254	2,663
Michigan	26	56	362	475	958
Oklahoma	42	97	982	1,444	2,711
Texas	257	744	6,706	8,680	17,238
Total	409	1,154	10,104	13,255	26,621

Summary of Wells Completed in the United States Week Ending June 18, 1938

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total, 1938	Total this Date, 1937
Alabama	....	....	....	....	.....	2	1
Arkansas	4	4	....	....	2,540	114	37
California	26	21	....	5	18,007	576	632
Colorado	1	....	....	1	.....	5	6
Florida	....	....	....	....	.....	....	.....
Georgia	....	....	....	....	.....	1	.....
Illinois	13	10	....	3	2,442	445	57
Indiana	1	....	....	1	.....	53	56
Kansas	28	19	....	9	17,758	858	1,148
Kentucky	13	4	1	8	560	324	110
Louisiana	28	21	1	6	11,050	500	374
Michigan	18	11	....	7	2,846	374	399
Mississippi	....	....	....	....	.....	10	6
Montana	2	2	....	....	135	27	69
Nebraska	....	....	....	....	.....	1	.....
New Mexico	13	10	2	1	2,499	246	329
New York	....	....	....	....	.....	19	6
Ohio	27	6	12	9	132	431	676
Oklahoma	62	38	1	23	4,938	1,040	1,465
Pennsylvania	2	2	....	....	3	82	78
Tennessee	....	....	....	....	.....	2	.....
Texas	237	180	5	52	233,082	6,253	6,910
Utah	....	....	....	....	.....	....	.....
West Virginia	12	6	6	....	62	340	414
Wyoming	8	5	2	1	5,198	49	52
Total this week	495	339	30	126	301,252	11,752	12,825
Total last week	473	342	34	97	439,033	....	.....
Total this year	11,752	8,127	930	2,695	9,508,283	....	.....

California Fields

Gusher establishes deep zone underlying Greeley.

Montebello west extension area gets big well.

Rio Bravo field is expecting new completions.

Los Angeles.—Reversal of the production situation in various California fields was illustrated during the past week, when Standard Oil Company brought in two wells, one at Kettleman Hills North Dome and another in the west extension to the Montebello field in the Los Angeles Basin.

At Kettleman Hills, Standard's No. 27-21J swabbed in from a depth of 10,919 feet for an initial yield of 700 barrels of oil per day, while at West Montebello the company's Harvey 2 came in for 1100 barrels daily at 5780 feet. The significant thing is, that the Kettleman Hills well explored into the Avenal zone where prolific production was expected and this project went twice as deep, while the Montebello well developed into a better well in a field which was discovered long before Kettleman Hills North Dome came into prominence.

The Basin has been combed thoroughly in past years for oil and in many instances ground that had previously failed to kick through with anything of interest, has ultimately become proven territory. The old Venice field, for instance, had been tested years before its discovery in 1929 by the Ohio Oil Company. Outlying points close in to Signal Hill, likewise had been tested without results, prior to the discovery of the Wilmington-Long Beach Harbor field. And now, West Montebello has surprised operators.

Years before Standard Oil Company entered the Montebello field, the Doheny interests geologized the district and a well was drilled to a depth of 3078 feet with one of the first rotary outfits in the state on a portion of what is now the Montebello golf club. Since then, however, geophysics has taken a prominent part in helping oil men find new crude supplies and reports are current that a Mid-Continent operator has acquired the drilling rights to this parcel with the expectation of starting the drill within 30 days. This has been brought about by the new activity in the West Montebello extension. Union, Sunray of Oklahoma, A. T. Jergins and Gilmore are understood to be acquiring parcels for protection.

Greeley Gusher

A well that "drew a blank" a year ago, has proved to be a sensational gusher type well on the floor of the San Joaquin Valley, northwest of Bakersfield. Standard Oil Company's KCL 11-2, in the Greely field, prospected unsuccessfully to a depth of 7800 feet and suspended, was brought in early last week and before choked in to conform to curtailment regulations, produced at the rate of 15,000 barrels of 35 gravity oil per day along with 6,500,000 cubic feet of gas from 11,520 feet.

Standard discovered the Greeley field in December, 1936, with the completion of KCL 11-1 at approximately 7800 feet. Immediately, it started drilling KCL 11-2 at a site 2000 feet southwest of the discovery well, but this second venture failed to kick through satisfactorily and the well was suspended until additional outpost wells were drilled. The discovery that the Avenal zone at Rio Bravo and Ten Section was productive prompted Standard to deepen KCL 11-2, with the astounding result.

In addition to adding many millions of barrels of reserve for Standard, this project establishes definitely a deep zone underlying Greeley as an aid to the necessity for oil curtailment. Standard has already reduced the flow from KCL 11-2 to 4000 barrels daily and June 18 it was to have been completely shut in until July 1, when it will be restored to production with a possibility that it will be curtailed to 300 barrels daily, the maximum allotment for new wells in the state.

Standard is drilling three other outpost wells to define the limits of Greeley field. KCL 11-15 is down to 6700 feet, KCL 12-5 is slated to spud this week while KCL 18-1 is drilling below 9000 feet. The Company has no plans for deepening of the discovery well of Greeley to take in the deep horizon.

Continental Oil Company's KCL E-1 in the Strand area, northwest of Ten Section has been swabbed for 12 hours and showed fluid level at 3800 feet, this being mostly mud and water with bottom of the hole at 8287 feet. It is believed, however, that this project will clean up shortly and more definite information will be obtained later in the week.

In the north end of the Wilmington field, Pacific Western Oil Company is preparing to place on production No. W-1 well which has bottomed at 5700 feet. General Petroleum's Harbor Community 12 was completed for 560 barrels of 25.8 gravity oil per day at 3920 feet.

Three Wells; Six Miles of Hole!

Early in the week beginning June 19, three wells being drilled by two companies in the Rio Bravo field, Kern County, are expected to be on production. These projects will probably swab in from the prolific Eocene formation. Collectively, they are taking in approximately 34,000 feet, or more than six miles.

A year ago, no well in the state had found commercial production below 11,000 feet, nor had any oil sand been found so deep.

Superior Oil Company is expected to bring in Anderson 1 below 11,400 feet and Wagner 4 at approximately the same depth. A water shut-off has been obtained by General Petroleum Corporation in Wagner 2, with bottom at 11,275 feet. This project is coring below 11,300 feet with the expectation of being completed within a week.

To Test Gatchell 2

Settlement of the division suit among landowners of Section 7-20-16, Fresno County, has cleared the way for a production test by Petroleum Securities Company's Gatchell 2, situated in

Rio Bravo field is rapidly taking on the appearance of a booming desert oil field. "Supply Row" has established itself and is laying in stocks of heavy-duty equipment that is being used for the exploration of the deep productive sands below 11,000 feet.

Section 18-20-16, a project believed to have discovered a new oil field close to the old Coalinga field. The settlement enabled Petroleum Securities to receive 113 acres of the 640 acres under dispute. The remainder was awarded to Section Seven Oil Company and Seaboard Oil Company. This section adjoins the section where Gatchell 2 was drilled to what is believed to be the Avenal sand. Because of the encouraging showings found by Gatchell 2, Universal Consolidated Oil Company is preparing to drill its first project nearby, while Magnet Oil Company has increased holdings with the acquisition of 160 acres in Section 32-20-15, near Coalinga.

Extension Looms

There are hopeful signs of an extension for the Kern Front field. A. J. Rubenstein's Kelly 2 in Section 20-28-27, exploring a 40-acre parcel geologized by the veteran J. E. Koeberle, is said to be capable of yielding 300-400 barrels of 18 gravity oil per day from 3300 feet. Although this well was drilled to bottom in 30 days, recementing difficulties and other problems delayed work. It is about 8 miles northwest of Bakersfield and is believed to be on the south side of a fault. The Premier field is a short distance northerly, although Kelly 2 is thought to have developed a separate fold.

Although finis has been written for Lloyd Corporation's No. 1, wildcat drilled north of the Ventura Land & Water Company's lease belonging to Tide Water Associated in the Ventura Avenue field, another test will be started at once 3500 feet west of the abandoned hole, which explored to 7500 feet. The first venture ran into a fault and failed to encounter any showings.

A number of failures have been recorded in the East Greeley field, Kern County, but Standard Oil Company of California will deepen Fleishauer Community 2, in Section 20-29-26, and carry it down to the Vedder. The Stevens sand was dry. The theory now is that Standard and Shell Oil Company wells encountered a fault or break, yet Standard's KCL 11-2 in the center of the field conclusively proved that the Vedder underlies the Stevens.

May Be Record

At Ten Section field, Shell Oil Company is reported to have finished one fourth of a planned program of 100 wells. The company is thought to have established a record in moving equipment from one drill site to another and rigging up in 50 hours.

Ohio Oil Company is making a deep test of Willard 1-A, at Willows, Kern County, now drilling below 5100 feet, having passed up a gas zone. Ohio's first well at Willows topped the gas sand at 4400 feet, but a blowout destroyed the derrick and equipment.

At Buena Vista Lake, Ohio Oil Company's wildcat is expected to make a production test as tanks have been assembled. Oil sand has been logged between 10,000 feet and 10,150 feet, while in the interval from 10,690 and 10,741 feet gray sand has been penetrated. Richfield Oil Corporation may profit by Ohio's discovery for it holds a large block to the northwest.

California Statistics

Japan is state's largest buyer . . . Post depression peak reached in 1937 . . . Crude reserves increased

In his annual review of the California petroleum industry, just released, J. R. Pemberton, oil umpire for Central Committee of California Oil Producers, reveals that Japan was the largest single buyer in the Pacific Foreign market, their takings amounted to 82,711 barrels daily of all petroleum products for 1937.

The umpire's annual report is one of the most comprehensive ever published and was prepared by the statistical department and other members of his staff. Due to its size, something over 200 pages including maps, statistical figures and countless pages of production data, the report was a little behind schedule. It covers such topics as function of the umpire's organization, conditions within the oil industry, general business conditions, profitable operation, production changes, curtailment practices, new completions and development, Central Committee activities, allocation methods used, supply and demand, table of new fields or deep zones discovered in 1937, table of extension or deep zones of old fields for 1937. In addition, the tables prepared give a resume of curtailment for 1937, totals by districts, number of wells and barrels daily, and details on total of all fields (major and principal minor companies detailed) and a review of the State's crude oil production and proration for the past year as handled by 7 major companies and 21 principal minor companies.

Pemberton's report reveals that the oil industry in California reached a post depression peak in 1937, and from the standpoint of demand, production and profits the industry scored its best year since 1929. Profits were 50 percent over last year, he stated, and that it appeared likely that the totals for the industry may exceed 1929, this being attributed to the large demand for motor fuel which accompanied the banner motoring season on the Pacific Coast and the increased requirements for the Far East. He said that the large Pacific Foreign demand brought about by the Oriental war was first felt in May and continued at a gradually increasing rate through November, but added that this latter demand may be considered as abnormal and its continuation beyond the duration of military and naval operations in the Far East is not anticipated.

CALIFORNIA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Montebello—		
Standard, Harvey 2	1595	5780
Long Beach—		
Hilldon, Pool 3	1040	4182
Marvell, Christenson 1	*	4505
Torrance—		
M. E. Albertson, Torrance 10	230	5031
C. C. M. O. Co., Torrance 23	140	5023
MacDonald & Burns, Moore 5	298	5025
Moore 8	332	5057
Summit, Wilson 1	300	4972
The Texas Co., Wilson 9	256	4997
Wilmington—		
General Petroleum, Harbor Comm. (LB) 12	1738	3920
Richfield, Pacific Dock (LB) 6	2972	4204
Sunray, Lakme 2	308	3150
Union Pacific, U. P. (LB) E-7	750	3900
Dominion—		
Master Pet., Recovery 3	65	1600
Fruitvale—		
Western Gulf, KCL B-36	256	2982
Kern River—		
Hast Oil, Kern 2	10	389
Midway-Sunset—		
Signal Oil & Gas, Kendon 5	135	1701
Mount Poso —		
Vanguard, Baker 11	250	1808
El Capitan—		
General Pet., Erburu 23	124	1310
Santa Maria Valley—		
Pacific Western, Carranza 2	3500	4992
Union, Mallory 1	2872	5021
McCoy-Cooney 1	836	5285
Round Mountain—		
Eastmont Oil, Olcese 7-A	*	1859
Sespe—		
Continental, Elkins 1	*	4159
Simi—		
Germanina Truccano, No. 1	*	1005
Ventura—		
Lloyd Corp., No. 1	*	7500

*Failures; †Junked; ¶Million cu. ft. gas.

Production Rose

The annual report shows that crude production was marked by a steady and substantial increase, month by month, from 582,000 barrels daily in January to 703,000 barrels daily in December, or 121,000 barrels daily. This increase in production, Pemberton said, was fortunately paralleled by an even greater increase in demand, and possibly one was the cause or result of the other. This favorable balance brought about stabilized conditions and prices were nearly constant, he said.

Pemberton said in his report that the significant feature of California production in 1937 has been the steady and uninterrupted rise. At the close of the year this mounting production was beginning to cause some concern in well-informed quarters for the necessity for a cut-back in production, he stated. Major and independent groups contributed to the overage, the report states, the majors contributing an increased production of 62,000 barrels daily for 1937, or 19.5 percent and the remaining producers in the state increased 59,400 barrels daily or 22.8 percent. Due to completion of new wells, there was an approximate increase of 119,000 barrels daily in actual production from December, 1936, to December, 1937.

Record Number of Wells

From a standpoint of new wells actually completed, Pemberton said, 1937 was a banner year, for 1469 new wells were completed, which exceeded by 245

wells, the year of 1929, the preceding peak. He said that increased drilling activity was recorded in 1936, and this continued into 1937, with the result that the number of producers completed for the state shows a 47 percent increase over 1936, while the actual barrelage of new production brought in by these wells shows a 75 percent increase. The report shows that 313 wells were abandoned during 1937, substantially the same number as for 1936; this representing only 21 percent of the 1469 wells drilled for 1937. In comparison, 300 dry holes were drilled in 1936 which was 30 percent of the 1106 wells completed for the year. Average production for each new well in 1937 was 560 barrels daily, as compared with 471 barrels daily for 1936, representing an improvement of 19 percent in well capacity. Of the 313 drilling wells abandoned for the 12 months of 1937, 118 were in wildcat territory and 195 in non-productive areas of proven fields, Pembton said the fast pace of drilling which has been maintained throughout the year, exceeds any year since 1923, and has been a source of profit to the equipment and supply houses and distinctly profitable to the producing division of the oil industry.

All state fields completed 697 wells for an initial potential of 272,068 barrels daily, or an average of 390 barrels daily per well, the report discloses. This compares with 765 wells with an initial of 343,500 barrels daily and well average of 447 barrels daily. Due to the intensive drilling campaign at Wilmington, 387 wells were completed.

Reserves Increased

In conclusion, for the new completions and development, Pemberton said, that the reserves developed during the year by the discovery of new fields and extensions in areas and drilling of deeper pools of old fields, substantially exceeded crude withdrawals for the same period. Pemberton estimated that new developments in the state indicated an increase of approximately 11 percent more crude than was in sight as of the end of 1936. He said the total for the last two years shows that the new discovered reserves for the period exceed the actual production of crude during the same interval and provides some addition to surplus which is sorely needed for the future requirements of the industry.

Writing on supply and demand, the umpire said the supply of crude petroleum for the year averaged 653,500 barrels daily. Six new fields, he said, accounted for 82 percent of the state increase in production and the largest producers, namely Wilmington and El Segundo, are credited with 73 percent of this increase. Also, the 6 new fields together with a like number of extensions of old fields were responsible for 60,000 barrels daily of the state total increase.

Fortunately, Pemberton said, the increased supply was eagerly sought both for our own consumption inside the United States as well as by foreign markets, especially those foreign countries bordering the Pacific Ocean. Total shipments to all the Pacific Foreign market amounted to 148,700 barrels daily and showed an increase of 39,500 barrels daily, or 36.2 percent increase over 1936. The domestic demand including continental United States, Alaska and Hawaii showed an increase of 42,000 barrels daily or 9.3 percent up. This market consumed the bulk of our products, and accounted for 493,300 barrels daily which is 70 percent of the total demand, he stated.

Pemberton said the total increase in demand over 1936, which amounted to 82,700 barrels daily was roughly divided 50 percent to offshore shipments and 50 percent to domestic needs. This was a 13.2 percent increase over 1936. The total overall demand was 709,800 barrels daily for the year and exceeded supply by 10,000 barrels daily. This resulted, he said, in withdrawals from storage over the entire year in the amount of 3,873,900 barrels. In this regard, an interesting fact was that the unusually high demand during the first of the year, accountable to the freeze, and a very active gasoline market during the summer resulted in a stock decrease of 10,262,000 barrels up to September 1. However, during the last 4 months of the year, 6,385,000 barrels were added to storage. This change in balance from a shortage of 42,000 barrels daily to a surplus of 52,000 barrels daily was accredited in part to the rapidly increasing production of the state, and also in a large measure to the seasonal drop in consumption during the fall and winter months, Pemberton said.

The distribution of the increased demand for the various products of petroleum was also interesting. Pemberton said. Gas and Diesel oils showed the largest increase of 29.7 percent or 19,400 barrels daily. Approximately 8000 barrels daily of this was due to the freeze in January, but the greater share resulted from the increasing use of Diesel power in agriculture, transportation and marine fields. Storage of this product was drawn down by 2,178,000 barrels and the total supply on hand as of the close of the year was 6,780,000 barrels, which represented 72 days' supply. Crude shipments increased 55.7 percent over 1936, or 20,500 barrels daily. This was principally due to larger Pacific foreign shipments.

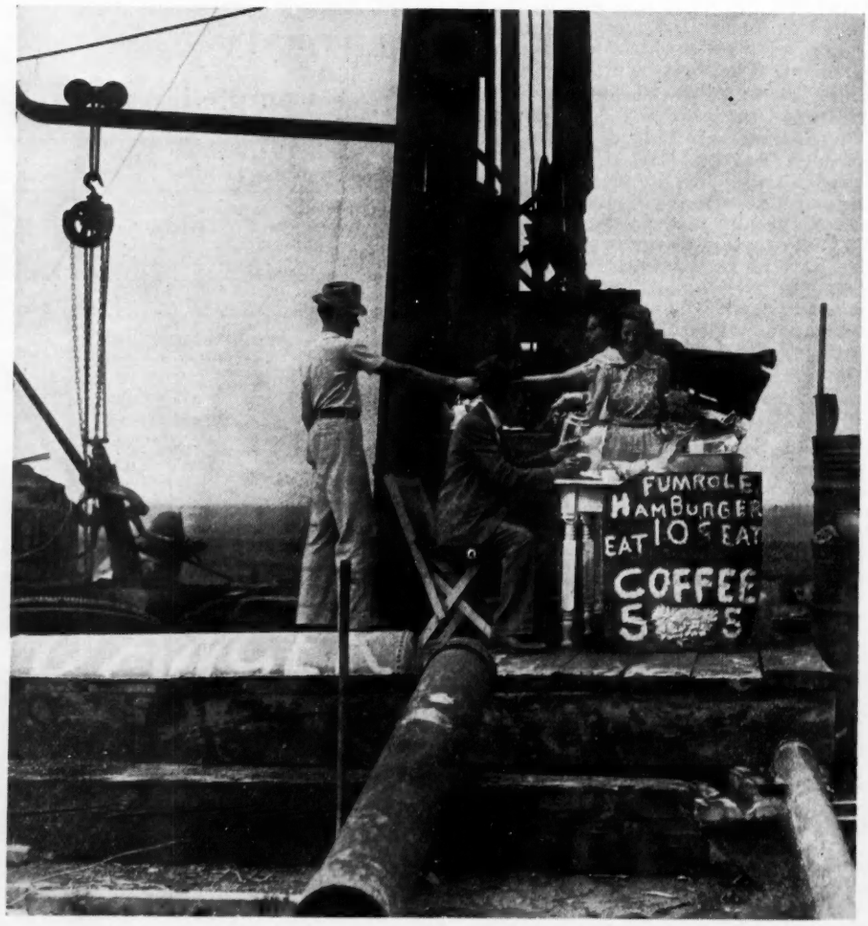
Hardin hearing set for June 20

A hearing on the Hardin field, Liberty County, will be held on June 20 at the conclusion of the statewide hearing. The commission will seek to determine whether three wells recently completed by Strake on their Finley lease and the Sun Company No. 1 A. Cessna located in the A. B. Hardin Survey are part of the Hardin field or whether they constitute a new discovery.

The commission expects to issue operating rules based on evidence taken at this hearing.

Hamburgers cooked over top of well

When drilling operations in a new oil field near Pueblo, Colorado, were interrupted temporarily, Mrs. Vern Newton and Miss Mary Trisler were quick to see the advantages in the crowds who visited the well daily. They erected a hamburger plate over the top of the hole, ignited the natural gas and did a rushing business.



Kansas Field Developments

Wildcat one mile west of Steinert pool produces oil.

Atlantic Refining opens new field in Finney County.

Barber County wildcat has small showing in Wilcox.

Wichita.—Western Kansas came through with one oil field last week, when Parks and associates established a potential of 340 barrels on pump in Gorham 1, SW NW SW 19-15-15w, Russell County, a mile west of Steinert pool. The Finney County wildcat of Atlantic Refining Company became a pool with a decision to make a pumping well of Nunn 1, C SE NE 27-21-26w, where swabbing tests were successful.

The Gorham well set 5-inch casing at 3342 feet. When it was drilled into the lime, oil rose 2800 feet in the hole. It was swabbed at the rate of 10 barrels an hour before going on the pump for potential rating.

First Finney Production

Assurance of the first production for Finney County came after further successful swabbing of Atlantic Refining Company, Nunn 1, C SE NE 27-21-24w, which began making oil last week. It produced 256 barrels on the swab in another 12 hours, with oil standing 300 feet in the hole. This well is producing from a sandy section of a formation, which was first identified at the Mississippi lime but finding the sand streaks has left source of the oil in doubt. Depth is 4658 feet.

Tubing is now being run and the well will be put on the pump. Indications are that it will pump 15 barrels an hour. The oil is 28.9 gravity, similar to that produced in the Shallow Water field, Scott County, 12 miles northeast. Oil from the Finney County well will be trucked to a small refining plant at Shallow Water, as the area has no pipe line outlets.

Surrounding acreage is held by other producers but no further drilling is in prospect until the successful wildcat has produced over a period.

Barber County Show

A showing from the Wilcox sand in Barber County centered attention there last week although the amount of oil is not impressive. Pryor & Lockhart's Grant C-1, NEc 18-31-13w, began to spray oil when five feet in the Wilcox sand at 4536 feet. The oil recovery amounted to only 85 barrels in 63 hours. Later it was put on the swab but failed to yield more than two barrels an hour. The hole will be deepened.

This well is a quarter of a mile south of the discovery well in the Lake City pool, where the one producing well is making oil from the Viola lime. A north offset was dry.

Presence of a Wilcox sand section and saturation are the encouraging factors in the test, as Western Kansas has but few instances of a consistent body of Wilcox sand.

Further encouragement for the area between the Ainsworth and South Ainsworth pools, Barton County, came last week when M. B. Amer and Vernon Oil & Gas Company's Seyfert 1, NW SW NE 3-17-13w, had a shot two feet in the Arbuckle lime, topped at 3380 feet. It is still drilling.

This well is three-eighths of a mile north of the test of Western Kansas Oil & Refining Company and Republic Natural Gas Company's Linsner 1, SWc SE 3-17-13w, which is being equipped for pumping potential test after filling 2400 feet with oil last week. This well had top of the Arbuckle lime at 3362 feet and drilled five feet deeper before filling to the point of testing.

Carter Oil Company is drilling out plug in its Rooks County wildcat, Whitford 1, NEc SE 12-7-17w, Rooks County. Depth is 3355 feet with pipe set at 2930 feet. Testing will follow.

The Ford County wildcat of Sinclair Prairie Oil Company's, Young 1, S½ NE 34-27-21w, will run electrical logging device to seek for saturation in formation above the Arbuckle lime, where it is bottomed at 5925 feet. This test picked up a section of the Wilcox sand but has had little encouragement in showings.

Second Arbuckle lime producer for the Harbiger area, Rice County, was assured when the Mid-Continent Petroleum Corporation pumped 440 barrels of oil in four hours from Schlicht 1, NEc SE 6-18-10w, offset to the first Arbuckle producer, Vickers Petroleum Company's No. 1 Roesler, NWc SW 5-18-10w. The Mid-Continent well was drilled to 3216 feet and set 5-inch casing at 3212½ feet. It was treated with 2000 gallons of acid.

Skelly Oil Company is now below 2500 feet in Volkner B-3, SWc NW 5-18-10w, another offset to the discovery well.

A mile to the southeast A. G. Kaiser has staked a location for Kaiser 1, NWc SE 8-18-10w, which will seek to extend the Arbuckle lime production of the area. The test is on acreage farmed out by Transwestern Oil Company and C. L. Carlock, Wichita operator.

New Wildcats Start

Rapid testing of acreage that has favorable structural evidence continues in Western Kansas.

In Barton County Gardner and associates have staked location for King 1, SWc SW SE 16-16-13w.

Mid-Continent Petroleum Corporation will test the area south of the Aldrich pool, Ness County, by drilling Collins 1, NWc 24-20-26w. The location is 11 miles south of the pool.

Russell County, most prolific producing county of the area, drew two wildcat tests. Coralena Oil Company staked location southeast of the Letsch pool, Hefferman 1, NE NE SW 34-14-13w. The other is being drilled by Aylward Oil Company, Selbach 1, SE SE NE 3-14-14w, south of the Russell pool.

Another test for Saline County was assured by Sullivan and Sidwell, Erickson 1, NEc 28-16-3w, four miles north of the Lindsborg pool.

Stafford County drew another wildcat test, four miles northwest of the Sittner pool, where Kenneth Harris will drill Barnes 1, NWc 8-21-12w.

Four wildcats were among the abandoned list for the week in Kansas.

In Chase County T. D. Duffy drilled Leedy 1, NE NW NW 26-22-9e to 2612 feet where it was stopped. It topped the Mississippi lime at 2570 feet.

Six miles south of the Webster pool and six miles north of the Zurich pool, Rooks County, Duwe and Farris abandoned Sutor 1, SW NE 28-9-19w at 3735 feet in the Arbuckle lime.

Twin Drilling Company failed to get a producer in Koltkemeyer 1, SWc 12-15-12w, which went to 3317 feet. Another Russell County wildcat which looked like a failure was El Dorado Refining Company's Ruby 1, C NE 1-15-13w, which had top of the Arbuckle lime at 3298 feet and at 3296 feet had had no shows.

North Dakota test

Minot, N. D.—Drilling in a hard formation, Standard Oil Company of California's Nels Kamp 1, Section 3-154n-96w, North Dakota's first deep wildcat oil test, was at 8200 feet last week.

KANSAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Chase County—		
T. D. Duffy, Leedy 1, ne nw nw 26-22s-9e	*	2612
Cowley County—		
E. B. Shawver, Fee 5, sw ne se 3-30s-4e	210	2827
C. E. Roth, Cretsinger 1, ne ne ne 15-31s-4e	206	3005
Ellsworth County—		
Continental et al, W. Steinberg 2, cs½ s½ nw¼ 27-17s-8w	2473	3247
Continental, C. K. Jansen 1, se se se 29-17s-10w	*	3307
Greenwood County—		
O. K. O. Lovett-McNeil 10, sw se ne ne sw 22-23s-13e	50	1587
McPherson County—		
C. R. Craft, Barnholt 1, sw sw se 30-20s-5w	40	3292
Continental, Kindblade 5, ne ne sw 20-21s-1w	437	3337
Rice County—		
Vickers, Roseler 1, nw nw sw 5-18s-10w	2278	3202
Salt City Gas Co., Welch 1, cs½ s½ se¼ 26-19s-8w	*	3493
Sinclair-Prairie, Wallace 7, nw se sw 29-19s-9w	31	3294
C. H. Weaver, Handy 1, ne ne se 30-19s-9w (pb 3274)	228	3275
Rooks County—		
Duwe & Farris, Sutor 1, sw sw nw 28-19s-9w	*	3735
Green Oil Co., McCullough 1, ne ne nw 35-10s-19w (pb 3505)	1050	3513
Russell County—		
Helmerich & Payne, Holl 2, cs½ s½ nw 22-14s-14w	1065	3073
Phillips, Downing 3, ne se sw 19-13s-14w	726	3046
Twin Drlg., Rein 1, cs½ w½ sw sw ne 20-14s-13w (pb 3247)	*	3297
Stanolind, Witt 2, se ne sw 10-14s-15w	1356	3265
Twin Drlg. Co., Koetkemeyer 1, sw sw sw 12-15s-12w	*	3317
W. I. Southern, Inc. Sellens Heirs 13, se ne sw 29-15s-13w	1733	3284
Neidens 4, sw ne ne 32-15s-13w	2606	3337

[*Continued on next page*]

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Company, Well and Location	Init. Prod. Bbls.	Depth
Parks et al, Gorham Est. 1, sw nw ne 19-15s-15w (pb 3120)	341	3352
Stafford County—		
Stanolind, M. A. Harris 1, ne ne ne 32-21s-12w (pb 3593)	*	3653
Stanolind, C. Fischer 1, nw nw ne 14-22s-13w	*	3788
R. A. Sims 1, sw sw ne 11-24s-11w	1304	3752
Skelly & T. T. Co., Kipp "C" 1, nw se nw nw sw 26-25s-14w	1589	3712
Woodson County—		
Sinclair Prairie, McClasky 15, sw ne ne se se 30-23s-14e	35	1681
Ward McGinnis, Manifold 1, se se nw 31-23s-15e	*	1592

*Failures; †Junked; ¶Million cu. ft. gas.

KANSAS

Completions

Week ended June 11, 1938.

Company, Well and Location	Init. Prod. Bbls.	Depth
Barber County—		
Barbara, McKee 2, cw½ ne¼ 28-33s-13w (pb 4636)	¶5.5	4890
Barton County—		
Shell, Radenberg 1, se se nw 3-17s-11w	2646	3342
Atlantic Refy. Soderstraum 1, ne ne sw 21-17s-13w, (pb 3252)	340	3254
Stanolind, Stuckemann 4, se ne se 11-20s-11w	944	3302
I. T. I. O., Rose Bryant 7, se ne nw 25-20s-11w	300	3278
Bryant 8, ne se nw 25-20s-11w	835	3282
Champlin Refg. Reeves 1, sw sw sw 29-20s-14w	*	3565
Butler County—		
Bennett & Abels, Glass 1, se sw nw 14-25s-3e	*	2782
Ellis County—		
Magnolia, Johansen 13, nw ne se 22-11s-17w	2587	3404
Greenwood County—		
Aikman et al, Meyers 3, ne sw sw ne se 10-24n-12e	6	1821
C. C. Whitaker, Arnold 1, cs½ 8-28s-11e	6	1227
Harvey County—		
Inca Production, Wilson 1, nw nw sw 29-23s-3w	*	3392
McPherson County—		
Ohio, Decker 16, sw se ne 20-21s-1w	498	3355
Pratt County—		
Atlantic et al, Berg 1, ne nw nw 22-26s-14w	*	4562
Harrell 1, se ne nw 11-27s-13w	164	4335
Reno County—		
F. Nadel, Tucker 10, cw½ e½ nw¼ 19-24s-4w	686	3383
Simpson-Noble, Thome 1, ne ne nw 17-26s-4w	*	4173
J. Carry et al, McPhetters 1, nw nw nw 22-26s-8w	*	4300
Continental, Ainsworth "A" 4, nw sw nw 30-18s-7w	*	3221
Rice County—		
Continental, J. A. Lewis 1, ne ne ne 14-18s-8w	1445	3242
Pickerill "A" 1, ne nw ne 24-18s-8w	2138	3224
Skelly, Vokland "B" 2, ne sw nw 5-18s-10w	3057	3012
Geo. Hinkle et al, Wesseler 1, se ne nw 34-18s-10w	*	3260
Magnolia, R. Boyer 7, ne sw nw 7-20s-10w	346	3320
Mid-Plains, Affie Hauschild 4, se nw se 10-21s-7w	15	3386
Whinery 1, cw½ w½ ne ne 10-21s-7w	741	3377
Douglas, Hauschild 5, sw sw nw 15-21s-7w	1089	3382
Russell County—		
National Ref. Reinhardt "D" 5, se se ne 19-14s-14w	725	3289
Carter, Josephine 4, sw se se 7-15s-13w	1619	3042
W. I. Southern, Inc., Sellens Heirs 12, ne se sw 29-15s-13w	2544	3308
Gulf, Michaelis 12, ne sw sw 32-15s-13w	1599	3352
Stafford County —		
Cities Service, Snider 1, nw nw se 3-21s-11w	2	3345
Torrey-Feaster, Wittrock 1, nw nw sw 34-21s-12w	*	3703
Stanolind et al, M. Volker "A" 3, se se ne 23-24s-11w	1698	3819
Stevens County—		
Republic Nat. Gas., Hamilton 1, cn½ section 15-35s-38w	¶10	2830
Woodson County—		
O. K. O., Headley 3, sw nw ne nw nw 33-23s-14e (pb 1672)	8	1684
Sheedy et al, Klick 15, ce½ w½ sw nw sw 20-25s-14e	30	1445
C. L. Sheedy et al, Tipton 8, ne se nw 28-25s-14e	35	1460

*Failures; †Junked; ¶Million cu. ft. gas.

Oklahoma Fields

Seminole County test prepares to pump dolomite oil.

Three discovery tests still trying to complete.

Barnsdall's Cimmaron County test dry at 5502 feet.

Tulsa.—Showings in wildcat wells in Seminole and Hughes counties gave encouragement for two small pools last week.

Denver Producing & Refining Company is installing pumping equipment to further test Mathis 1, SW NW 7-6n-6e, Seminole County, where small amounts of oil have been swabbed from the Simpson dolomite.

Tankage is being erected to allow further testing of Phillane Oil Company's Morrison 1, SEc SW 13-9n-10e, which is in the second Wilcox sand.

Three previous wildcat strikes in Cleveland, Logan and Payne counties, where new fields are indicated by producing wells, have not yet completed.

An outpost failure of the week was abandonment of the Cimmaron County test of Barnsdall Oil Company, School Land 1, C NW SE 36-5n-5e, E. C. M., at 5502 feet. It had reached its contract depth without favorable showings.

Despite an increase in water output in flowing tests of the Cleveland County wildcat of W. A. Delaney, Burgher 1, SE SW 12-7n-2w, lease dealing continues. Dealings indicate that the common opinion is that better production will be had north and east. Prices of both leases and royalty have declined since the well first had production from the second Wilcox sand, top 7670, total depth 7682 feet. A recent flowing test resulted in 368 barrels of oil with 650 barrels of water.

Until higher water recedes in the Cimmaron river no testing will be done in the Payne County wildcat of The Texas Company, Longan 1, C W½ NW NW, 12-17n-1e, which opened another second Wilcox sand pool three weeks ago. The well is still shut in at plugged back depth of 4974 feet.

Small shots have been used in efforts to gain higher output of the Logan County wildcat of Sinclair Prairie Oil Company, Crews 1, SWc NE 27-16n-1e, which has been drilled to 5238 feet. It was plugged back and shot first with 10 quarts and then with 20 quarts when cleaning out was started. It continues to flow by heads. Present total depth is five feet lower than last week. Cable tools are being used in the cautious deepening process.

Two locations have been made in the area between the north end of the Oklahoma City pool and the Britton field, following issuance of a spacing order to assure 10-acre drilling. Fain Drilling Company is building rig for Little 1, SWc NE 281-12-3w. Olson Drilling Company and associates are digging cellar for Vanecki 1, SE SW NE, 4-12-3w.

Another test outside of the community block of the Ramsey field, Payne County, was assured when E. H. Moore, Inc., started work on Means 1, NW NE NW 19-18n-2e. The location is three locations south of Mid-Continent Petroleum Corporation's Columbia Wetzel 3, NW NE SW 18-18n-2, which had lowest potential of the nine producing wells.

Failure was marked against a second Wilcox sand test of Noble County last week when Cromwell-Franklin Oil Company quit drilling at 5377 feet in No. 1 Holcomb, C SW SW 34-20n-1w. It entered the Simpson series at 5275, had first Wilcox sand at 5318, top of the second Wilcox at 5365 and base of this formation at 5375 feet. An electrical test indicated saturation in the top of the second Wilcox. A core, however, recovered only salt water.

To Pump Seminole Wildcat

Encouragement from swabbing tests, which started last week, resulted in a decision to try to make a pumping producer out of the wildcat strike of Denver Producing & Refining Company's Mathis 1, SW NW SW 7-6n-6e, Seminole County, between the Konawa and Grayson pools and north of the small Swan field. Tubing is being run to pump from the Simpson dolomite, topped at 3835 feet and drilled to 3842 feet. It swabbed 80 barrels in 17 hours and indications are that it will pump around 100 barrels initial. The test has small gas pressure with no water showing.

A Hughes County wildcat showing for production is Phillane Oil Company's Morrison 1, SEc SW 13-9n-10e, where tanks are being built for swabbing test. The well is in the second Wilcox sand 4025 to 4036 feet, where it has shown oil with some water.

In central Hughes County, southeast of Calvin, Phillips Petroleum Company is running quarter-inch tubing in Becker 1, NE NW SW 8-5n-10e, which has been in process of completion for several months. It has completed its 15,000 barrel allowable output. Depth is 5680 feet.

Final completion of the quarter-mile southeast extension of the Jesse pool, Pontotoc County, for 2700 barrels potential should result in more locations. The extension of Stanolind Oil & Gas Company and Amerada Petroleum Corporation, is Grennan 1, NE SE SE 12-1n-7e, McLish sand, top was at 4560 feet; bottom, 4603 feet. Continental Oil Company owns adjoining leases.

Effort will be made to make a gas producer from the Skinner sand by R. L. Kemp in the Payne County wildcat, Rafferty 1, SE SE NE 6-18n-5e, which had a show of oil in the Wilcox sand when shot between 3660 and 3690 feet three weeks ago. It failed to make a commercial oil producer and is being plugged back.

Interest in the deep zone of the old Fox and Milroy pools, Stevens County,

Southern Oklahoma, has shifted to the southeast, where Gulf Oil Corporation has entered the Simpson series in Johnson 1-A, C SE NW 27-2s-3w. This well is a north offset to Ruth Williams 1, C NE SW 27-2s-3w, the first of the deep producing wells of the area.

Although efforts are still being made to gain production in Harley 1, C NW NW 19-2s-3w, the Carter Oil Company well which offsets the Harley Community producer on the east in the Milroy section, so far there has been little encouragement. It is to be plugged back to 8225 feet from its total depth 8280 feet. Both acid treatment and gas lift have failed to get production.

Thorough testing of the area is assured because its drilling wells are at depths to warrant carrying them down to the several sections of Ordovician rocks.

Carter Oil Company's Feagin 1, C NW SW 36-2s-3w, is drilling at 7275 feet. Its Lester 1, C NW NW 35-2s-3w, is drilling in Viola lime below 6400 feet.

Gulf Oil Corporation is below 5300 feet in Sylvan shale, top 5290 feet, in Franklin 1, C NW SE 27-2s-3w.

Garret 1, Gulf Oil Corporation test, C NW SW 27-3s-3w, is drilling in Hunton lime at 5080 feet. This concern's McClure 2, C SE NE 28-2s-3w, found top of the Viola lime at 6776 feet and is still drilling. Its Lester 7, C NW NW 35-2s-3w, is drilling below 6400 feet.

Lester 1, being drilled by Carter Oil Company and Gulf Oil Corporation, C NW NW 35-2s-3w, is in the Simpson below 6830 feet.

On the west side of the Cement pool, Caddo County, Ray Stevens, Inc., has a distillate producer in Griffin 4, NWc SE 27-6n-10e. The rig to this well was damaged by fire when it made an oil flow while perforating casing at 4707 feet two weeks ago. When the rig was repaired it began spraying distillate along with a gas yield.

The gas is being used for lifting fluid in the same concern's Thompson 1, SW SE NW 27-6n-10e, depth 5505 feet. This well is flowing 65 barrels daily by gas lift.

Ray Stevens, Inc., is drilling at 3375 feet in Thompson 2, SE SE NW 27-6n-10e.

Equipment for gas lift is being installed at the Stevens County deep wildcat of Coline Oil Company, Johnson 1, SW SE SE 1-2n-8w, which has hole full of oil at plugged back depth of 9086 feet after drilling to 10,000 feet. Shut-in pressure on the casing is 175 pounds. This well has had oil in the hole for several weeks but lack of pressure has prevented flowing test.

OKLAHOMA Completions

Week ended June 18, 1938

Company, Well and Location	Init. Prod. Bbls.	Depth
Carter County—		
Kewanee Oil, Keck 29, nw se ne ne ne 5-4s-3w	15	1170
Cotton County—		
Jim Turner et al, Collins 3, se se ne 18-4s-10w	*	1307
Creek County—		
Strozier, Cauley 4, sw nw sw 12-16n-11e (pb 1780)	*	2385
Atlantic, Harjo 2, se sw ne 27-14n-10e	65	3247
Frierson & Kirchner, Morton 2, sw ne se 27-14n-10e	*	3320
Chatman & McFarlen, Brooks 2, sw nw sw 36-15n-10e	75	3118
Okla. Gaso. Plant, McIntosh 1, nw nw se 26-17n-7e	*	3054
O. M. Ireland, Wilkinson 1, nw se se ne se 10-17n-10e	*	1806
Sand Springs Home, Tho. Atkins 31, cn½ ne ne ne 5-18n-7e	*	2638
L. B. Jackson, Berryhill 1, nw nw nw 1-18n-10e	*	2320
Daniels & Morrison, Filley 3, csw ne ne 24-18n-10e	3	743
Big 4 Pet. Co., Roy Copeland 1, ne se nw 24-19n-7e	50	2667
Darby Pet. Co., D. McBirney 1, se se se 24-19n-8e	*	3104
J. P. Brady & Son, Duncan 4-B, ne sw sw se ne 19-19n-9e	8	2453
Jefferson County—		
W. G. Schwartz et al, Penniston 1, sw sw nw se 17-7s-5w	2	806
Rips, Ungerman et al, M. Jones 1, nw se nw 16-7s-5w (pb 808)	6	818
Kiowa County—		
Jake Hughes et al, Fultz 1, se se se 10-6n-18w	*	1238
Lincoln County—		
E. W. Jones, Thomas 1, ne nw nw 2-14n-2e	205	5089
Wilcox O&G, DeLozier 3, ne se sw 10-14n-6e	55	3014
Muskogee County—		
Metzger, Johnson 6, ne sw sw nw nw 19-14n-18e	14	1594
Mussellem, Evens 3, ne ne se sw 32-14n-19e	*	1502
Pepis, Lowe 1-A, se nw nw ne se 19-15n-16e	20	1241
C. Lambert, Fisher 1-A, se se sw se sw 31-16n-15e (pb 1753)	*	2504
Noble County—		
Cromwell Franklin et al, Holcumb 1, csw nw 34-20n-1w	*	5377
Okmulgee County—		
Blaise et al, Fox 5, nw se se sw nw 22-13n-14e (pb 2760)	25	2820
Detrick, Douglas 1, nw se sw 33-14n-11e (otd 2592)	*	3318
Smith et al, Spaulding 3, nw se se ne ne 1-14n-12e (pb 1995)	¶5	2160
B. W. Parks, Adams 1-A, ne se se ne sw 28-15n-14e	*	688
The Texas Company, M. Bruner 8, sw sw sw se se 16-15n-14e (otd 2299)	*	2653

OKLAHOMA Completions

Week ended June 11, 1938.

Company, Well and Location	Init. Prod. Bbls.	Depth
Carter County—		
Shell, Horton 20, s½ ne¼ 6-4s-3w.	38	1233
Creek County—		
Grimes & Neal, Flinchin 4, nw sw se 11-19n-9e	*	2428
Whitehill, Morrison 9, cw½ w½ se ne sw 8-18s-11e	10	1788
Sooner, Colber 1, se nw nw ne se 8-18n-12e	*	2190
Garfield County—		
Roy Star Oil Co., Chaek 3, center nw¼ 4-21n-3w	*	2255
Garvin County—		
Magnolia, S. H. Cowan 2, se nw nw nw sw 15-1n-3w (otd 1335)	58	1758
Sanedan Oil Co., Murray 2, se nw nw 32-1n-3w	44	3056
Greer County—		
J. H. Everett, Gus Braumann 1, ne nw nw 11-5n-21w	*	550
Jefferson County—		
Murta & Wilson, Bourland 1, csw se 24-7s-4w	*	4528
Lincoln County—		
Wilcox O&G, DeLozier 4, nw se sw 10-14n-6e	60	3022
Murray County—		
Gilbreath & Dutton, Wolfe 1, cse sw 8-1n-2e	35,334,320	2522
Muskogee County—		
J. M. Foltz, Fewell 1, nw nw se ne 28-15n-17e	6	2082
Okmulgee County—		
Harmon, Mitchell 8, nw ne nw 20-12n-12e	*	3381
Browning & Potter, Walker 1-A, ne nw ne ne nw 5-13n-14e	2	1300
K & K, Fixoco 2-A, cn½ nw¼ 23-14n-12e	5	1752
J. L. Selby, Grayson 6-A, se se se nw ne 3-14n-14e	10	580
Klingensmith, Farr 19, cn½ n½ ne nw 35-16n-11e	¶4	331
Osage County—		
Barnsdall, 3, nw se ne se sw 23-24n-10e	325	1721
Pawnee County—		
Swift, Achley 1, ne ne ne 23-20n-9e	57	1303
Payne County—		
Mid-Continent, Ramsey 3, se sw nw 18-18n-2e	943	4791
Pontotoc County—		
Magnolia, Chambers 2, ne sw nw 36-2n-6e (pb 3098)	*	4065
Magnolia, Metro. Life 39, se se se 22-2n-7e (pb 1700)	*	2673
Sinclair Prairie, Vivian 5, sw nw nw 22-2n-7e (otd 3900)	19	3924
Burris 19, ne sw se ne nw 27-2n-7e	240	2600
Carter, Smith 10, ce½ w½ ne nw sw 28-2n-7e (pb 2465)	20	3546
Smith 11, nw se nw ne sw 28-2n-7e	¶1	3464
L. A. Henry, Parker 1-A, se nw sw sw se 17-4n-8e	*	680
Pottawatomie County—		
Gulf, Barton 4, ne ne nw 13-7n-4e	18	3081
Prod., Inc., Cardwell 4, nw sw nw 15-7n-4e (pb 3465)	¶9	3560
Milburn 1, se nw nw 15-7n-4e (pb 3500)	¶8	3545
Magnolia, Banta 8, nw se nw ne se 14-7n-4e	20	3125
J. F. Smith, Hynes 2, ne se ne 21-7n-4e	208	3180
Dixie O&G, Richards 1-A, cs½ s½ se ne se 35-7n-4e	240	4283
Seminole County—		
Magnolia, Fleet & Osborn 2, sw se ne 26-5n-7e	100	2830
Grisso, Royalty, Johnson 1, ne sw sw 27-6n-5e	242	2715
Deep Rock, Lacy 4, sw se sw 14-8n-6e (otd 4249)	25	4275
Stephens County—		
L. A. Wilkins, Crump 12, se nw ne ne ne 15-2s-5w	8	884
Carl Carter, Buelah Warden "C" 1, se se sw nw ne 34-1s-5w	*	1945
Tulsa County—		
E. H. Brady, Brunner 1, se nw nw nw ne 27-17n-13e	*	2069

Company, Well and Location	Init. Prod. Bbls.	Depth
Osage County—		
Ray Branstetter 1, nw se se se se 29-22n-11e	*	1480
Pure & Sinclair Prairie, 179, ne ne sw ne ne 5-23n-8e	2	738
Petterson & Sinclair, Prairie 4, sw se se nw ne 24-24n-7e	12	783
Coralena Oil Co., 3, ce½ w½ se ne sw 21-25n-6e	*	2734
R. Lathen, 3-A, ne sw nw se nw 2-28n-10e	*	1032
Pawnee County —		
Johnson, Garten 3, cw½ w½ se 22-20n-7e (otd 2559)	4	2672
Payne County—		
Mid-Continent, Brandon 2, ne se ne 13-18n-1e	1218	4834
Columbia, Wetzel 3, nw se sw 18-18n-2e	1234	4731
Pontotoc County—		
Patsy, Mehard 2, sw se sw 21-2n-6e	125	3395
Carter, Craddock 2, se se ne 25-2n-6e	46	4305
Magnolia, Norris 14, se sw se 21-2n-7e (pb 2619)	65	2661
Louall, Hardin 6-A, ce½ w½ se nw nw 30-2n-7e (pb 3360)	35	3530
Delaney, Butler 1, sw se nw 21-5n-8e (pb 1225)	6	2160
J. Dixon et al, Harrell 1, nw nw se 29-5n-8e	*	2745
Pottawatomie County—		
N. Berrett, Phillips 1-A, ne nw nw 10-7n-4e (pb 3200)	*	3884
Pioneer Drlg., Lewis 1-A, sw nw se 15-7n-4e	*	3847
Phillips, LeClaire 1, sw nw ne 23-7n-4e (pb 3557)	73	4334
Seminole County—		
Westheimer, Factor 4, se se sw 25-5n-7e	175	2240
J. B. Terry et al, Scroggins 2, ne sw ne 4-6n-6e	5	2885
Troup & Moore, Harris 1, ne se nw 4-6n-6e	480	2850
Winkler, Bruner "B" 6, nw ne ne 4-6n-6e	200	2840
Greer et al, Coker 1, nw ne ne 25-7n-5e (pb 3012)	12	3013
Wood Oil, Cully 1, sw sw nw 34-7n-5e	*	4411
Villines et al, Reed 1, ne ne ne 35-7n-5e	75	2999
Francis, Lewis 2, se se se 32-7n-6e	50	2914
J. F. Smith, Harryman 3 "C," se sw se 33-7n-6e (pb 2815)	200	2855
I. T. I. O., Livingston 3, nw se nw 15-8n-6e (otd 4204)	15	4268
Carter, Timmy 1, cn½ ne ne 2-10n-6e	13	4100
Stephens County—		
Gulf, Bowers 17, nw se se 14-2s-4w (pb 510)	5	590
J. G. Beard, L. Willis 4, cse sw 23-2s-6w	30	1744
Geo. L. Pace, Allen 19, sw ne nw se ne 3-2s-8w	300	2205
C. W. Tomlinson et al, Montgomery 2, ne ne nw sw se 11-2s-9w	15	2065
Tulsa County—		
Conway & Chafey, Wooley 1, nw ne ne 28-20n-13e	*	1300

*Failures; †Junked; ¶Million cu. ft. gas.

*Failures; †Junked; ¶Million cu. ft. gas.

New Mexico Fields

Extension assures development northeast of Vacuum. Lea County wildcats are showing for production.

Hobbs, New Mexico.—Expansion of the Vacuum field 2½ miles northeast of the east extension area provides a greater width than anticipated and assures a prolonged development campaign. Failure of a southeast outpost to encounter production in drilling to the approximate water level tends to define the production trend in this direction. Wildcats situated to the northwest and west by south of this Lea County field were showing for small producers after plugging off bottom hole water.

The major extension occurred when Phillips Petroleum Company's Santa Fe State 6 C SW SE 21-17s-35e, swabbed 18 barrels hourly for 10 hours after using 1000 gallons and 6000 gallons of acid in Permian lime at 4578 feet, or 616 feet sub-sea. Later gauge credited the well with swabbing and flowing 183 barrels oil in 8 hours. Prior to acid treatment the well showed very little oil and gas. Geological markers reveal that the structure dips moderately to the east, although lime porosity is not as good as in the field proper. Confident of a producer, Phillips Petroleum Company made location for Santa Fe State 7, C SE SW 27-17s-35e, 1¼ miles southeast of the above outpost, before entering the pay zone, and is drilling at 850 feet.

The Texas Company's State 1-P, C NW SE 7-18s-35e, 1⅔ miles southeast of the field, failed to yield oil or gas when swabbed down at 4875 feet, or 903 feet sub-sea, and will deepen. It is bottomed near the water level. However, the company's Corbin 1, C NW SW 10-18s-35e, wildcat discovery, 8 miles west by south of Vacuum, filled 3950 feet with oil after a 240-quart shot at 4259-4315 feet. It was plugged back from water, topped at 5115 feet, or 1131 feet sub-sea.

Repollo Oil Company's State 1-197, SEc 6-17s-34e, situated on a separate geological feature 4⅓ miles northwest of the Vacuum field, found the water table about level with the latter in logging sulphur water at 4990-5000 feet, with an elevation of 4118 feet. The hole was plugged back to 4680 feet, and treated with 1000 gallons of acid. Production test is pending. Saturated lime entered at 4644 feet yielded an average of 18 barrels of oil daily when swabbed down while deepening with tools. A small flowing well is anticipated after multiple acid treatments.

Weiner et al's Parcell 1, near C S½

NEW MEXICO
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Eddy County—		
Red Gulch Oil Co., State 2, 4-17s-28e	¶2½	1695
Western Drl. & Engineer Co., Western 1-A, near se sw nw 23-17s-29e	40	2990
Neil Wills et al, State 3-A, ne se sw 20-20s-30e	175	1531
W. K. Royalty Co., State 2, 16-17s-31e	40	3678
Lea County (Eunice)—		
Continental Oil Co., State 2-F, lot 8, 1-21s-36e	150	3807
State 1-J, c nw ne 2-22s-36e	500	3800
Lea County (Langlie)—		
Amerada, Stuart 2, c w½ sw nw 14-25s-37e	200	3427
A. R. Eppenauer et al, Stuart-Community 1, nw ne ne 22-25s-37e	320	3373
Western Gas Co., I. Curry 1, c se se 1-24s-36e	¶8	3697
Lea County (Monument)—		
Continental et al, Britt 1-B-15, c w½ nw nw 15-20s-37e	214	3919
Sanderson 9-A-14, ne se nw 14-20s-36e	500	3873
Lea County (Vacuum)—		
Magnolia, State-Bridges 8, c nw se 23-17s-34e	360	3740
Lea County (Wildcat)—		
Continental et al, H. E. Marsh 1-A-31, c ne se 31-20s-39e	*	4355

*Failures; †Junked; ¶Million cu. ft. gas.

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SW NE 5-23s-38e, eastern Lea County wildcat, has halted operations at 4500 feet. No shows were encountered that justified testing. Continental Oil Company et al's Marsh 1-A-31, C NE SE 31-20s-39e, also located near the Texas border, has been plugged after junking hole while showing a small volume of free oil after a nitro shot and acid at 4355 feet.

Activity Reduced

Field activity in Lea County continues on a reduced basis, with only 5 new projects the past week, including 3 required offsets in the Eunice field.

Active rigs in the Maljamar field were increased to 3 when Maljamar Oil & Gas Corporation's Baish 10, C SW NW 22-17s-32e, was added to the list last week.

WEST TEXAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Andrews County (Fuhrman)—		
Fuhrman Pet. Corp., Ford 9	1231	4453
Cochran County (Wildcat)—		
Honolulu Oil Corp., C. S. Dean 1-91	*	5067
Crane County (Jordan)—		
Snowden-McSweeney Co., University 4	2355	3557
Crockett County (Crockett)—		
L. H. Choate-F. T. Hogan, University-Humble 1-H	63	1425
Ector County (Foster)—		
Arkansas F. O. Co., Johnson 2	518	4228
Atlantic Ref. Co., Johnson 2-C	1570	4220
Barnsdall, F. Foster 11, sec 13	840	4175
Stanolind, E. F. Cowden 11-B	1777	4163
Ector County (Goldsmith)—		
Gulf, Goldsmith 104	1296	4270
Goldsmith 105	1904	4190
Ector County (Harper)—		
Pantex Oil Co. et al, E. F. Cowden 1	1455	4220
L. H. Wentz et al, T&P Land Trust 4-A	1878	4178
Ector County (Wildcat)—		
Sinclair Prairie, P. Moss 1-A	17	4265
Howard County—		
Lockhart Pet. Corp., R. Scott 1	1520	2865
Standard Oil Co. (Texas), Dodge 11	125	2800
Jones County—		
Condor Pet. Co., H. Sayles 16	263	1968
Shaheen Oil Co.-Big Six Oil Co., P. L. Telford 1	*	2290
Loving County (Kyle)—		
Shell, T&P Land Trust 1-A	†	3290
Pecos County (Netterville)—		
Chas. E. Marsh, Jr. et al, Netterville 3	41	2317
Superior Oil Co. (Tulsa), Netterville 6-A	50	2266
Pecos County (Payton)—		
Sun, B. R. Payton 2	*	2061
Pecos County (Torborg)—		
Ohio Oil Co., Yates 2-1-G	246	422
Pecos County (White-Baker)—		
Cardinal Oil Co., White-Baker 1-B-45	30	1731
Sterling County—		
Loffland Bros. Co.-Moore Bros. Corp., Parramore 1	*	2908
Upton County (Gulf-McElroy)—		
Gulf, Crier-McElroy 31	833	2823
Upton County (McCamey)—		
Cardinal Oil Co., E. Wooley-Shell 12	828	2137
A. D. Devore-J. R. Minnich, Burleson-Conoco 14	357	2162
Humble, R. P. Ricker 23-A	*	2238
R. P. Ricker 15-B	211	2285
R. P. Ricker 20-B	184	2680
R. P. Ricker, 22-B	175	2685
Shell, A. S. Burleson 2	78	2460
T&P Coal & Oil Co., E. Shirk 10-A	174	2182
Ward County—		
Gulf, E. W. Estes 94	972	2649
G. T. Hall et al, J. M. Patton-Shell 3	309	2286
W. P. Luse & Ice, Blair 1	50	2155
Magnolia, Geo. Sealy 4-46	567	2855
Winkler County (Emperor)—		
Emperor Oil Co., Woodley Halley 4	1019	2908
Winkler County (Kermit)—		
E. L. Gelder-Samwan Oil Co., Kessler 2	107	3203
Magnolia, Walton-State 12	735	2911
J. B. Walton 157	573	2942
Winkler County (Scarborough)—		
Magnolia, W. F. Scarborough 12	46	3075
Yoakum County (Bennett)—		
Magnolia, Bennett 1	1429	5252

*Failures; †Junked; ¶Million cu. ft. gas.

West Texas Fields

Old Church-Field-McElroy structure yields gusher.

Two wildcats fail in upper part of basin region.

San Angelo, Texas.—Gulf Oil Corporation's J. T. McElroy 174, situated near the apex of the Church-Field-McElroy structure, which has been exposed to drainage since 1926, developed a natural flow of 1738 barrels of 32 gravity oil on a 3-hour test through two 4-inch lines on 7-inch casing to indicate that it will be one of the largest wells in this old Permian area. Production is from saturated zone at 2770-73 feet, with an elevation of 2568 feet. Two gas traps were inadequate to handle the flow. This well is near NW NE SE Section 199, Block F, offsetting McElroy 171, recently completed with an initial rating of 6611 barrels after a nitro shot at 2871 feet. The company holds lease on all of the McElroy ranch, adjoining the Church & Fields area on the south, and has deferred development of the high point of the structure in anticipation of a gas-cap condition. The new well encountered 16,320,000 feet of gas with light oil spray at 2660 feet.

Two Failures

Two failures resulted from wildcatting in the upper portion of the basin region. In Terry County, L. E. Hults et al's P. J. Ross-Gulf 1, SWc NW C&M Section 6, Block D-14, 3½ miles south of the Slaughter field, Hockley County, halted operations in sulphur water at 5125-26 feet, with an elevation of 3548 feet. A few gallons of oil appeared at 5095-5107 feet. Atlantic Refining Company's University-The Texas Company 1, near C NW NE Section 26, Block 11, southern Andrews County prospect, shutdown after drill stem test at 4600-66 feet yielded sulphur water. No oil or gas shows were recorded.

J. T. Perryman et al's Doak-Pure 1, C NW NE D&W Section 43, Block H, northeastern Gaines County wildcat on the west portion of the Cedar Lake geophysical high, logged top of anhydrite at 2152 feet, with an elevation of 3165 feet, and was drilling at 2450 feet.

Another southeast outpost for the Sand Hills field, Crane County, is in prospect following the completion of Humble Oil & Refining Company et al's Tubb 1, NWc PSL Section 19, Block 32, which gauged 16,774,000 feet of wet gas after 4-stage acid treatment in lime at 4430 feet. This extension well made oil prior to the fourth acid job. Truett B. Cranfill, trustee, made location to drill J. B. Tubb 1, SWc PSL Section 20, Block 32. Gulf Oil Corporation's W. N. Waddell et al 8, NW NE PSL Section 4, Block B-27, half mile north of deep production in this field, failed to register production in upper section of Ellenberger, topped at 6055 feet, and was coring at 6057 feet.

Wildcat in Rotan region showing for production

Abilene, Texas.—Preliminary production test given a Fisher County wildcat about 5½ miles southwest of the Rotan pool registered a favorable showing early last week. Daube Bros. and Forest Development Corporation's A. C. Bennett 1, C NE NE H&TC Section 51, Block 2, 3 miles southwest of Rotan, filled 1150 feet of fluid, estimated 10 percent salt water, in drill pipe in 20 minutes when tester was used at 3700 feet. The oil was pronounced high gravity, and was accompanied by a good volume of gas. Operations were halted to run 7-inch pipe. Top of Noodle Creek lime was logged at 3679 feet, with an elevation of 2018 feet, and saturated lime was cored at 3696-98 feet.

Site for this prospective producer was selected on core drill information, and the well recorded a high structural position for the area. It is located 1¾ miles southeast of Forest Development Corporation's A. M. Dry 1, which was abandoned December, 1936, at 4537 feet after acidizing an oil and gas show at 4347-54 feet with negative results.

Expansion of the Rotan pool 3 locations to the southeast appeared favorable when General Crude Oil Company's Clyde Cassey 1, NE NW SW H&TC Section 173, Block 2, developed 2600 feet of oil in hole after drilling regular sandy-lime pay to 3554 feet.

TEXAS PANHANDLE Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Carson County—		
Magnolia, Fee (244) 41	387	2960
Northern Nat'l Gas Co., A. J. Dauer 1-a	484	3115
Panhandle Eastern P. L. Co., Sanford 2-12	¶12.2	2850
Sanford 1-14	¶46.1	2766
Texoma Nat'l Gas Co., Burnett 4-G	¶31.9	2670
Gray County—		
Gulf, Faulkner 13-A	236	3013
The Texas Co., Chapman 6-B	319	2770
Wm. Jackson 3	522	3038
Hutchinson County—		
Drilling & Exploration Co., Inc., Watkins 19	367	3011
Phillips Pet. Co., Thompson 6	793	3175
Southern Pet. Exploration, Inc., Halle 3	392	3039
Stanolind, Ware 13-A	418	3175
The Texas Co., J. W. Moore 8	466	3100

*Failures; †Junked; ¶Million cu. ft. gas.

Texas sour gas proration suit to be heard June 23

Methods of sour gas proration in the Texas Panhandle will be involved in a suit to be tried in Austin on June 23. At that time a three-judge Federal Court will hear the Henderson Case which involves sour gas processed from wells in the West Panhandle field. Commission officials believe that this hearing will result in final determination of several sour gas proration problems.

North Texas Development

New Cooke discovery does 840 barrels after deepening.

K-M-A facing marketing troubles with pipe lines filled.

New Cooke County field believed on big structure

Wichita Falls.—Sinclair Prairie Oil Company's J. M. Best 1, Thos. Toby Survey, A-1054, northeast Cooke County, which established new deep commercial production June 2 from Deese (Strawn) sandy-lime, topped at 4887 feet, was later cored to 4900 feet, and on June 11 swabbed and flowed 840 barrels of 35 gravity oil initial via 9⅝-nich pipe at 4875 feet, then flowed 360 barrels natural the next 24 hours. Larger yield is expected when production tests are resumed through tubing.

Drilling of another test on the same site has been authorized, according to reports, and it will be carried to 7000 feet, or the Ellenberger lime, which was the objective of the original well. Development will be on a conservative basis until economic conditions improve. Large companies control the close-in acreage, with leases in force until 1941 and 1946, and are reluctant to undertake a major drilling campaign. Under normal conditions this discovery would precipitate a boom, as supporting geophysical and subsurface information indicates a large structure that extends across the Walnut Bend of the Red River into Oklahoma. The river bed may escape development since the United States Government is launching a flood control and irrigation project that will raise the water level to about 40 feet opposite the new oil area. However, high banks will protect the probable producing section on the Texas side of the river from inundation.

Deep prospecting is in store for two North Texas counties that have not entered the production column. Operations are to be started by A. F. and L. O. McMillan et al on C. W. Furr 1, C NW NW W&NW Section 418, Block H, Childress County, 2 miles south of Kirkland, with a 5750-foot depth contract. Location is one mile south of Watchorn Oil & Gas Company's Mollie Low 1, which caused a major lease play in 1935, after flowing 40 gravity oil by heads from pay topped at 5633-53 feet. Water trouble developed without a decisive test, and the well was later carried to the Ellenberger lime at 8195-8223 feet, which yielded water. Humble Oil & Refining Company paid $35,000 for half interest in Furr 1 and the drilling site, subject to the completion of the depth contract, and full interest in 800 acres.

In Knox County, Roeser & Pendleton, Inc. has rigged up to drill G. H. Beavers 1, C SE SW H&TC Section 151, Block 44, 1½ miles southeast of Truscott. Location is on a geophysical high, with estimated 155 feet of closure. The Indian Territory Illuminating Oil Company, original owner of the block, gave the above concern half interest in the 80-acre drilling site and full interest in 2000 acres for the drilling of a 4600-foot test. Similar deal has also been made on a Haskell County block, cenering about 4 miles north and 1 mile west of Rule.

K-M-A completions exceed available pipe line room

Wichita Falls.—Well completions at K-M-A are accumulating at a faster rate than the 5 pipe line companies care to absorb. The latter have made progress in providing connections to wells that remained closed for several weeks after preliminary gauge, and some relief was gained through the entry of Magnolia Pipe Line Company with nominations for approximately with nominations for approximately 1000 barrels daily. Contrary to reports, no independents have undertaken construction of gathering lines to make purchases.

Crude marketing difficulties are in store for future well completions, unless the well allowable is reduced at the end of the month. Checkup on field operations reveals a total of 107 tests due for completion shortly. Of this number 36 are classed as complete, but awaiting official proration gauge, or pipe line connection, and 71 have reached the final casing point, else are in process of completion. Crude requirements of the purchasers must be substantially improved before these forthcoming completions are absorbed without forcing lower allowables on older wells. The current drilling report also lists 34 tests drilling with rotary between casing points; 9 tests with surface pipe cemented; 16 derricks and rigs; 4 idle tests; and 64 locations.

Golding Estate and Tommy Cochran's D. R. Preston 1, SWc H&TC Section 27, Block 7, major extension for the Kadane sand sector, exceeded preliminary production estimates by flowing 108 barrels of oil in 3 hours through ¾-inch choke from broken pay at 3820-78 feet. Top of lime marker was called at 3749 feet, or 2618 feet sub-sea.

Wildcatting on blocks removed from the K-M-A and Panther deep areas resulted in two projects giving promise of production from the Strawn. Harry Hines, Hancock et al's W. R. Hammond 1, H. Corzine Survey, A-56, Archer County, about 1 mile southeast of the Chalk Hill field, showed minor oil saturation in broken sand and shale at 3647-67 feet, or about level with small Strawn producers at Chalk Hill. Gray & Thweatt's W. P. Ferguson, 1, NE SE NE S. P. Section 2, A-968, 1½ miles northeast of Mankins, logged streaks of oil saturation in sand and shale at 3573-82 feet, and in lime at 4053-67 feet, followed by sand at 4067-82 feet.

NORTH TEXAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Archer County—		
T. H. Brown et al, W. Ford 1	*	1802
R. O. Harvey-Sinclair Prairie, J. J. Perkins 1, sec 7	*	4995
F. P. Hynes et al, J. M. Black 1	*	2108
Clay County—		
Beasley et al, C. J. Shumake 1, sec 4	65	1154
M. T. M. Drl. Co., L. S. Wright 1, sec 2632	*	890
Cooke County—		
Kerlyn Oil Co., Blagg 6	2	2050
Trumter Oil Co., Andress 16-A	40	768
Mrs. C. E. Stacey 5	55	752
Mrs. C. E. Stacey 6	67	780
Foard County—		
O. P. Burnham et al, T. L. Ward 1	†	2046
Jack County—		
J. G. Fowler et al, D. R. Sewell 1, blk 3	*	451
B. C. Gilmore et al, Wm. Hanna 5, sec 3316	*	535
Joe A. Worsham et al, O. E. Cash 3	174	3255
Montague County—		
Lesh & McCall, A. M. Brown 1, lot 7	*	2551
Martin & Hines, J. W. King 2	52	1768
Sinclair Prairie, Rosa Hodges 2, blk 55	75	1733
Wichita County (K-M-A)—		
Bridwell Oil Co., First Nat'l Co. 3-B, blk 27	896	3862
R. B. Bryant et al, G. L. Nance 2	486	3886
Continental, Sue Mitchell 1-B, lot 8	320	3879
Waggoner Bros. 1-B, sec 11	584	3915
Waggoner Bros. 4-B-C, lot 1	552	3812
Dalport Oil Corp., Munger 2, lot 2	1424	3882
E. C. Oil Co., G. W. Lewis 1, blk 20	750	3824
G. W. Lewis 2, blk 20	576	3810
Mangold 4, blk 37	536	3793
J. E. Farrell & Co., N. H. Martin 1, sec 12	728	3832
Humble, First Nat'l Co. 14-C, blk 26	1136	3833
Lulu Pace 2	560	3860
Tom F. Hunter et al, Waggoner Bros. 38-A, sec 8	68	3906
Waggoner Bros. 39-A, sec 8	640	3915
Kadane-Griffith Oil Co., J. A. Kemp 3-A, lot 1	520	3893
King Oil Co., Waggoner Bros.-Gulf 3, blk 10	832	3813
King Oil Co.-Perkins-Cullum, Ferguson 5, lot 4	800	3802
P. G. Lake, Inc., Reilly-Griffin 1	*	4015
Reilly-Griffin 2	*	4012
Lewis Prod. Co., Mangold 4, blk 36	496	3837
L. G. S. Oil Co., First Nat'l Co. 1, blk 26	1104	3855
Maro Oil Co.-A. F. C. Oil Co., H. W. Barton 1, blk 24	1920	3804
W. B. Omohundro et al, W. L. Hodges 4	776	3929
Staley Oil Co., Ferguson 4, blk 2	608	3860
Sunray Oil Co., Mangold 5, blk 38	640	3822
Sam K. Vierson et al, R. L. Kempner 1-A, blk 3	624	3815
Mrs. H. B. Wallace et al, G. W. Lewis 2, blk 20	864	3835
H. H. Wegener et al, First Nat'l Co. 4, lot 13	408	3885
Wichita County—		
W. E. Bernhard et al, T. O. Shappell 1, blk 16	7	876
B. & M. Drl. Co., Williams-Parker 2, sec 25	*	706
D. H. Bolin-Jim Whittington, Waggoner Bros. 3-A, sec 21	*	1156
Pois & Schultz, Foster-Allen 17-J, sec 2	*	941
Wilbarger County—		
Phillips Pet. Co., Waggoner Est. 204, sec 45	4000	3052
Young County—		
Joe E. Butler et al, Benson 2, sec 1398	42	936
Byars & King, A. B. Street 1, sec 303	*	4511
Christie Bros. et al. J. A. Brown 2	125	3800
Duncan-Holt-Marchman, Benson 32, sec 1391	10	912
L. V. Hull et al, E. J. Leslie 5, sec 1400	*	950
Kleiner et al, Langston 60, sec 1490	10	562
J. E. Lake et al, M. K. Graham 1, sec 1663	*	752
Lupton & J. McLester, C. M. Gibson 6	425	3754
Pameta Oil Co., Tatum 28, sec 1908	5	671
R. T. Parkin et al, J. J. Henderson 1, sec 1913	*	520
R. J. Watson et al, T. J. Routon 1-A, sec 243	*	758

*Failures; †Junked; ¶Million cu. ft. gas.

East Texas Fields

Distillate found in Trinity on flank of East Texas. Chapel Hill wildcat fails to revive its flow.

Basin's deepest test gets gas from Lower Trinity

Tyler.—Development of commercial gas and distillate production from the Lower Trinity series on the east flank of the East Texas field became assured last mid-week when Humble Oil & Refining Company and Gulf Oil Corporation's Robertson 1, M. Mann Survey, kicked off after gun-perforating casing near the contact of the Pettit and Travis Peak. This wildcat, situated 4 miles east of the field, indicated a flow of 3,500,000 feet of high pressure gas through ¾-inch tubing choke, with distillate, from perforations at 7244-85 feet, having previously showed 1,500,000 feet of gas and salt water at 8010-8258 feet.

East Texas inside location drilling is at low level

Tyler, Texas.—Drilling of inside locations in the East Texas field declined to the lowest level the past week that has been recorded in 13 months. Enforcement of the 5-day production week, with no exceptions granted, as is the case in other fields of the state, has at least temporarily curtailed the addition of new wells when all other measures failed. Current survey on field activity lists 45 rigs in service and a total of 94 operations, representing a decline of 11 active rigs. Bulk of the decline is credited to independents, who are forced to finance new development from oil payments, bank loans and extended credits from equipment firms.

Aggressive drilling has been carried on without interruption since the crude price posting was advanced 15 cents May 22, 1937, to $1.35 per barrel. Well completions this year have averaged 179 per month for the first 5 months, being considerably more than for the same period last year.

Twenty-nine oil producers are listed as completed the past week, and 16 were drilled by majors. Independents generally account for more than 50 percent of the weekly quota.

Utilization of the Paluxy sandy-lime, upper member of the Trinity, as an outlet for salt water produced from the Woodbine in the East Texas field has not proved satisfactory on the first experiment. Humble Oil & Refining Company's W. W. Holland 37, Thos. Allen Survey, near Gregg-Upshur County line, cored the Paluxy zone at 5045-5363 feet with poor porosity and considerable shale in the section. Tubing was run with packer installed 100 feet off bottom, and the formation failed to absorb water in sufficient volume to indicate that the Paluxy can be used for water disposal. However, the Woodbine on the west flank of the field is being used for this purpose.

The depth record for the Woodbine Basin area is held by this well in drilling to 10,275 feet. The lower Travis Peak, which was topped at 7325 feet, and the lower Marine, topped at 9600 feet carried salt water.

Hunt Oil Company's Bradley 1, Chapel Hill area, Smith County wildcat, situated 8 miles west of the East Texas field, has failed to revive its gas and distillate flow after washing hole with oil. The hole is bottomed at 7528 feet. Brief tests through tubing inserted inside drill pipe that was cemented in the hole due to a fishing job have proved the area for high pressure gas production from the lower Glen Rose.

Richards & Holloway's Tarkington 1, southwest outpost for the Flag Lake field, Henderson County, flowed 10 to 15 barrels of oil hourly on preliminary gauge through ⅜-inch choke, with high gas/oil ratio, production is from Woodbine sand at 3047-62 feet, with an elevation of 321 feet.

W. S. McKee et al's O. D. Mikeal 1, A. B. Patton Survey, situated on a separate fault plane and northwest of the field, was coring above the Woodbine at 3090 feet. It has an elevation of 321 feet.

Exploration of a fault plane situated east and parallel to the displacement responsible for the accumulation of oil in the Woodbine at Flag Lake has been undertaken by the High Point Oil Company on subsurface data. Rig has been moved in to drill Dan Smith 1, located 2163 feet from south and 150 feet from the east line of 58-acre tract, F. Brown Survey, half mile south of Tool. This Woodbine prospect is 2.8 miles east by south of Flag Lake production. Lease spreads have been sold from the original 700-acre drilling block.

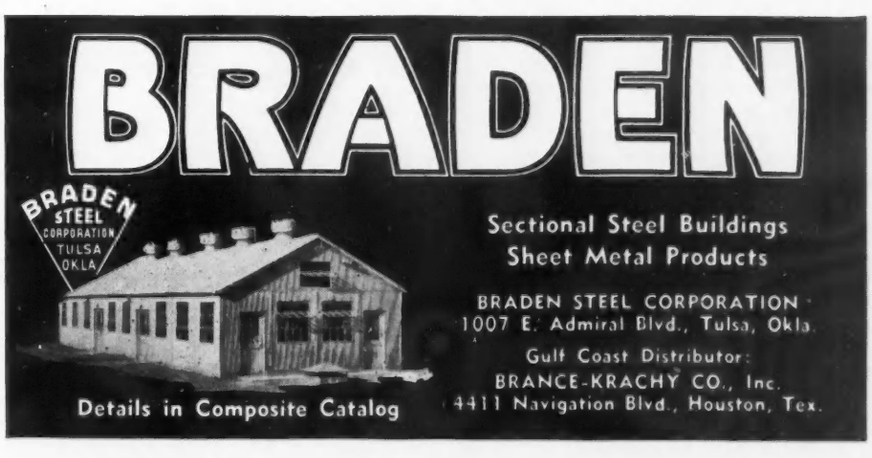
Kelsey dome, Upshur County, originally rated as one of the outstanding lower Trinity prospects in the Woodbine belt, failed to offer any encouragement for production in the drilling of Tom Hunter, American Liberty Oil Company et al's Dr. Chas. Carter 1, J. H. Fields Survey, which has been abandoned at 9538 feet. Top of Travis Peak was called at 7525 feet. Nearby lease owners refused to support a test to the lower Marine, projected goal when the Trinity series proved thicker than normal.

EAST TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Joiner Area—		
Humble, W. L. Price 58 (432.05-ac)	5000	3735
H. White 6-A (38¾-ac)	5600	3718
Magnolia, A. K. Perkins 12 (76.28-ac)	2500	3675
Ohio Oil, H. Clay 25 (113.56-ac)	750	3668
S. H. Moores 47 (200-ac)	2000	3708
Roy A. Reynolds et al, E. S. Thrash 4 (1-ac)	3000	3782
Stanolind, Maxwell 2-B (2.96-ac)	6400	3754
Kilgore Area—		
J. Brown Cutbirth et al, E. S. Smith 2 (1.78-ac)	6000	3636
Gulf, C. Brown 47 (263.52-ac)	8400	3542
C. E. Christian 37-C (277.85-ac)	7800	3712
Hall & Hall, Kelly-Dickson 5, blk 152	1500	3580
E. M. Jones and Atlantic, D. Wills 8 (41.64-ac)	4200	3652
Ketal Oil Co., W. Smith 2 (1.87-ac)	8500	3538
Magnolia, Ed. Mitchell 9 (17.63-ac)	3600	3615
R. H. Still 4 (45-ac)	24	3580
A. D. Roberts et al, W. P. Bright-well 7 (6.8-ac)	8200	3644
Shell, J. B. Watson 74 (385.2-ac)	9300	3641
J. B. Watson 75 (385.2-ac)	9200	3647
E. W. Willoughby 22 (57.7-ac)	3500	3613
Stanolind-Tide Water, Walker 7-B (52-ac)	4000	3559
Vireca Oil Corp., M. T. Cole 4 (15-ac)	7800	3559
Weaver-Crim Corp., J. N. Peterson 4 (24-ac)	3000	3626
Longview Area—		
Atlantic Ref. Co., A. Christian 6 (31-ac)	5600	3670
J. B. Bond et al, J. R. Fenton 6 (20-ac)	4000	3590
Ellis Oil Co., Mackey-Humble 18 (147.1-ac)	1500	3701
Gen'l American Oil Co., Harris Bros. 21 (91.54-ac)	5200	3505
Gilcrease Oil Co., J. W. Free 6 (35.96-ac)	8000	3624
Sabinas Oil Corp., T. M. Collins 17-C (89-ac)	5500	3661
Stanolind, McKinley Bros. 63-B (60.7-ac)	6000	3595
Marion County (Jefferson-Rodessa)—		
Gulf Oil Corp., Sol Smith 1, Jno. Hanks sur	233	6118
Shell Pet. Corp., Schluter 3, S. Smith sur	503	6080
Anderson County (Cayuga)—		
O. M. Rector et al, H. P. Barton 4 (200-ac)	3000	4060
Anderson County (Long Lake)—		
Tide Water Associated-Seaboard, V. Y. Stott 1 (109.36-ac)	1500	5316
Franklin County (Talco)—		
Humble, T. L. Leake 6 (191.9-ac)	114	4310
Titus County (Talco) —		
Byrd & Frost, Inc., G. W. Belcher-Gulf 7, (80-ac)	336	4270
Humble, E. Fishback 3 (49.76-ac)	290	4322
WILDCATS		
McLennan County—		
A. C. Kilgore et al, Hanzelka 1	*	621
Trinity County—		
Boone & Jordan, Crouch 1	*	2650
Upshur County—		
Tom Hunter-American Liberty Oil Co., Chas. Carter 1	*	9538

*Failures; †Junked; ¶Million cu. ft. gas.



Southwest Texas Fields

Jim Wells wildcat fights gas pressure in Vicksburg.
Jackson County may be scene of a new field.
Fitzsimmons field yields production in Hockleyensis.

Four coastal wildcats may open new fields

Corpus Christi. — Magnolia Petroleum Company's only drilling wildcats along the lower Gulf Coast of Texas were added to the list of possible oil field openers late in the week with one well attempting to blow out and another preparing to make a completion attempt. In addition, two other coastal wildcats were attempting to complete and may open new pools.

Magnolia Petroleum Company's Valadez Heirs 1, Share 5-B, La Anima Sola Grant, in southwestern Jim Wells County, bottomed at 6390 feet, apparently in the Vicksburg, was fighting a tremendous gas pressure. The blowout preventer was closed and a very large amount of commercial mud was pumped into the hole in an effort to control the pressure. After working with the well for hours, partial circulation was obtained, but the drill pipe was stuck, likely on a bridge.

The test is of great importance, being on the new Vicksburg sand trend, where a drilling campaign has been commenced. The test is about 11 miles southwest of Ben Bolt and is north of the Premont field, another Magnolia venture.

The same company's A. A. Seeligson 9, 1320-foot north outpost to the East Premont field, was waiting on cement after plugging back from 6605 feet to 6565 feet. It tested salt water at the lower level, regular producing zone of the field.

West of these wells and on the Concepcion prospect in southeastern Duval County, Standard Oil Company of Texas, was coring ahead below 2850 feet, having showed a fair amount of oil in sand section 2400-10 feet. The well is Garcia 1, Share 4, and is on a key prospect for this county.

Atlantic Refining Company's D. F. Jones 1, NW SW Section 72, George H. Pauls Subdivision, San Patricio County, was again testing. It attempted completion through perforations at 5297-5300 feet, but screen was clogged. The well had been drilled to 6010 feet, plugged back to sand 5297-5324 feet, which showed both oil and salt water on drill stem test. The well is located about 3 miles northeast of the prolific East White Point field, San Patricio County.

Coast Line Oil Corporation's State of Texas 1, on the Red Fish Bay Prospect, found salt water when drill stem test was made through perforations at 8555-76 feet. It had been carried to 8660 feet and a series of perforations are to be made in the Frio and Marginulina sands. The above test was the first. This well is in State Tract No. 320 and is about 2½ miles southeast of Aransas Pass in Aransas County.

Gulf Coast has another possible pool, this one being in Jackson County. Magnolia Petroleum Company's A. West Ranch 2, south of Vanderbilt, drilled to 7217 feet, then set 7-inch casing at 5680 feet. It has a series of spots to be tested, the first being a sand topped at 5628 feet. It showed for a gasser spraying oil in sand and sandy shale section 5069-93 feet. The well is in the Ramon Musquiz Grant, about 8200 feet northeast of No. 1 and 3600 feet west of the Lavaca River.

Cordelle field, new Jackson County shallow producing area, is coming into its own from a development standpoint. H. J. Porter has staked two locations and the Magnolia Petroleum Company one. The field will be sufficiently expanded by these wells, if productive, that several more companies will enter the play.

Plymouth Oil Company has completed its 100th well in the Plymouth field in San Patricio County. The well is the 99th producer.

H. M. Reed's A. D. Holloway 1, in the Clara Driscoll field, Nueces County, produced 103 barrels of pipe line oil via artificial lift on a six-hour potential test. The well was deepened to 5333-55 feet, where it apparently had opened a new oil sand. The test previously had been abandoned at 4388 feet. It paves the way to further drilling in that area. The Texas Company, Sun Oil Company, Wellington Oil Company, Heep Oil Corporation, Phillips Petroleum Company, Refugio Refining Company, Mid-Continent Petroleum Company, and numerous others have holdings in the general area.

Second well northwest of Barbacoas completed

Mission.—A second producer has been completed in the new Northwest Barbacoas area of Starr County, to indicate that this field will receive an active drilling program in the near future. The newest well is Lee S. Davis' Garza 1, south offset to the discovery well, flowed at the rate of 125 barrels of oil per day through ⅛-inch choke under pressures of 160 pounds on tubing and 410 pounds on casing. It was completed in sand 2656-65 feet. Rig has been skidded back to Garcia 1, first producer, and it will be reworked in an effort to control excessive gas pressure. The wells may be an extension to the Barbacoas field or may be an entirely new pool, Railroad Commission hearing is scheduled to make the determination.

In the meantime, several deals have been made between the wells and the main field, some three miles to the southeast, and wells will be drilled.

Deep drilling in the Rio Grande Valley, includes a couple of wells by Wheelock and Collins on key prospects. Guerra 1-A, Share 20, on the La Reforma Prospect, Starr County, was nearing the 6600-foot level at which protection string will be set. Temple Lumber Company 1, South Hidalgo County, has been started on a 7500-foot obligation.

Sun Oil Company may be opening a new gas field 14 miles north of Rio Grande City in Starr County, J. J. Young 1, Share 1-B, Porcion 79, drilled out and perforated 2710-20 feet, where it is showing for a gasser. The test had been carried to 3008 feet and casing set 2743 feet. The Hockleyensis was encountered in this well at 2100 feet.

Barbacoas hearing recessed indefinitely

The Texas Railroad Commission has recessed indefinitely its hearing on an extension of the Barbacoas field in Starr County. Lee Davis and Eastern Oil Company have recently completed a new well in the area which may become an extension of the old field.

At the hearing in Austin last week owners of the discovery well said that they were interested in obtaining a 10-acre spacing rule and a rule requiring 150 feet of surface casing. They requested that the recessed hearing be held in the Valley about June 25.

Hockleyensis production for Fitzsimmons field

Laredo—A multiple well drilling program for another eastern Duval County oil pool is assured with H. J. Porter's Fitzsimmons 2, in the newly discovered Fitzsimmons pool, Duval County, finding a sand in the Hockleyensis zone, apparently just above the Government Wells. Broken sand was logged 3572-92 feet and good sand 3592-3623 feet. A drill stem test of the well, an offset to the discovery producer, netted 625 pounds pressure in three minutes at 3592-3603 feet. A second test 3599-3603 feet built up 700 pounds pressure in four minutes. A third test was made 3603-13 feet in which the well flowed pipe line oil in 41 minutes through ¼ and ⅜-inch chokes and rocked up a pressure of 35 pounds. When the tool was broken down, 1800 feet of pipe line oil and 275 feet of salt water was recovered. The test then was drilled ahead to 4300 feet, drill stem test of the last eight feet, being made through ¼-inch chokes, top and bottom. The well flowed at the end of 10 minutes and showed 150 pounds pressure. Casing was set for completion. The rig was skidded several feet from the Fitzsimmons 2 for a shallow test.

Arkansas Fuel Oil Company was having difficulties with Cuellar Brothers 1, Section 96, attempting to open a new pool about six miles southwest of San Diego in Duval County. Perforations were made in the Pettus sand at 5109-20 feet, where the well swabbed salt water. Perforations were then made at 5130-36 feet, bottom of the zone, where a squeeze job was effected.

New serpentine plug near Lytton Springs

San Antonio. — A new serpentine plug in Caldwell County, possible Taylor-Chalk area in Bastrop County and several new deep wildcats along the upper Balcones fault zone, were San Antonio district feature happenings in another dull development week.

Fred W. Shield swabbed about two barrels of crude per hour from the serpentine to open a new plug. about midway between the Lytton Springs townsite and the field that bears its name. C. H. Walker 1, in Block 12, P. Martinez survey, topped the serpentine at 1230 feet, drilled to 1326 feet and found saturation in the last 24 feet. Casing was landed at approximately 1300 feet. This strike was the result of a magnetometer survey and correlation of several failures drilled in the general area.

About six miles north of Red Rock in Bastrop County, Ogden and Riddle were making a pumping test in C. L. Riddle 1, H. Wernell survey. The well is bottomed at 1770 feet, or 7 feet in the chalk. The casing is set at 1563 feet. It showed a fair amount of oil when tested and likely will make a small producer.

F. Pederson has staked location for Brown et al 1, in the D. Hudson survey, Lee County, and near the previously drilled wells on the Tanglewood prospect. The test is projected to 6500-foot Edwards limestone. A 7200-foot limestone test is to be started immediately by Paul C. Teas in the Smithville sector of Bastrop County. The well will be Grizzard 1, northwest corner of 72.8-acre tract, A. Graham League, and north of Vinklarek 1, abandoned in 1936 at 7142 feet. The latter well had good shows in the Edwards formation and casing was set.

SOUTH TEXAS
Completions

CORPUS CHRISTI DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
Aransas County—		
Tom Graham, Edwards 3, McCampbell	450	7150
Wilkinson, Murray 1, McCampbell	550	7220
Bee County—		
Dougherty, Hicks 5, Normanna	*	4699
Calhoun County—		
Normandle, Cook 4, Heyser	*	lcn.
De Witt County—		
Hines, Boothe 1, Swindell sur	*	3014
Hidalgo County—		
Schmitt, Flores 1, Samfordyce	¶15	3017
Jackson County—		
Humble, Davis 1, I&GN sur No. 20	*	6505
Porter, Pressly 1, Cordella	275	2674
Jim Wells County—		
Coates, Lindsay and Reed 2, Alice	750	5331
Howell, Lindsay and Reed 5, Alice	750	5311
Nash, Hyde 1, Premont	¶3	2370
Smith & Story, Premont 2 Premont	*	2410
Nueces County—		
Reed, Holloway 1, Clara Driscoll	500	5385
Seaboard, Luby 26, Luby	500	5068
Luby 29, Luby	500	5069
Luby 10, Luby	500	5075
Sinclair, State Texas 3, Flour Bluff	600	6664
Wellington, Dugger 5, S. Clara Driscoll	550	5430
Refugio County—		
Houston, Pratt-Hewitt-Rooke 44, Refugio	450	6203
Nordan, O'Connor B-12, Tomoconnor	900	5920
O'Connor B-15, Tomoconnor	1150	5941
Pearson, Ryalls 4, Refugio	500	6820
Quintana, O'Connor 67-A, Tomoconnor	1600	5920
San Patricio County—		
Phillips, Schmidt 4, Midway	400	5350
Plymouth, Owen 2, East White Point	650	5686
Welder 100-C, Plymonth	700	5856
Victoria County —		
Gulf, Traylor B-5, Heyser	500	6050
Transwestern, McFaddin 9-E	150	4421
Willacy County—		
Sal Vieja, Garcia Land 2, San Juan de Carricitos gr	*	10,007

LAREDO DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
Duval County—		
Arkansas, Rossi 10, North Sweden	900	4790
Benedum & Trees, Puig 15, North Sweden	450	4890
Government Wells, Lundell 26, Lundell	97	1507
Hiawatha, Parr 12, North Sweden	650	4758
Southland 8, North Sweden	650	3930
Humble, Serna 16-B, Seven Sisters	150	2206
Magnolia, Duval Cty. Ranch 19 (203) Piedre Lumbre	150	2087
Duval Cty. Ranch 22 (59) Gov. Wells-Lundell	20	1492
Well Est. 4, Hoffman	192	2817
Jim Hogg County—		
Harrison, Martinez 2, Colorado	350	3006
McMullen County —		
Boysen & Jones, Nueces L. & L. Stk. Co. 2, S. M. Williams sur.	*	1505
Red Bank, Nueces L. & L. Stk. Co. 1, sur 9	*	1560
Starr County—		
Davis, Garza 1, Barbacoas	375	2665
Webb County—		
Bolling, Frost Bank 1, sur 596	*	537
Holland & Killam, Leyendecker 1, Killam-Oilton	200	2005
Sawyer, Garcia-Villarreal 1, sur 720	*	2480

SAN ANTONIO DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
Bastrop County —		
Belcher, Roemer 1, Harris sur.	*	2221
Riddle, Callahan 1, A. Mayes League 19	*	2715
Caldwell County—		
Ellmag, Pope 2, Rains sur	59	2718
Ogden, Lovell 1, Dale	*	2840
Wyrick & Linkenhoger, Magee 2, Branyon	390	2341
Teas & Maryland, McKnight 1, I&GN sur	*	7141
Guadalupe County—		
Morris, J. Anderson 3, Darst Creek	250	2653
Medina County—		
Medina, Schmidt 1-A, Ina	10	945
Pulliam & Yost, Zuberbueler 1, Dunlay	*	1025
Williamson County—		
Fuchs, Bachmeyer 2, Byersville	*	1365

*Failures; †Junked; ¶Million cu. ft. gas.

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GRIZZLY TUBING PROTECTORS

Texas Gulf Coast

Dickinson field receives two major extensions.

Attempt to be made for flank oil at South Houston.

Fairbanks and Friendswood outposts disappointing.

Houston.—The southwestern portion of Dickinson field, Galveston County, sometimes referred to as Gillock, received 2 major extensions last week. Approximately 2500 feet east of production at Gillock and in the J. Sellers Survey, Humble Oil & Refining Company completed Fream 2 flowing 595 barrels of 39.9 gravity oil daily through a quarter-inch choke from 8094 feet. Tubing pressure was 1100 pounds. Casing was sealed. Fream 2 was perforated with 10 shots from 8088 to 8094 feet. Southeast of Gillock 4500 feet, Pure Oil Company completed one of the best producers in the area. M. Stewart 1 flowed 119 barrels of pipe line oil in 3 hours through a quarter-inch choke. Tubing pressure was 1550 pounds and casing pressure was 450 pounds. M. Stewart 1 was perforated with 94 shots from 8180 to 8200 feet.

Disappointment at Bolivar

The first failure for Bolivar prospect, Galveston County, is Sun Oil Company's Atkins 1, B. Franks Survey, abandoned at 7364 feet. Some reports state the wildcat had several showings of oil.

The first failure for Cedar Point field out in Galveston Bay, offshore of Chambers County, is Humble Oil & Refining Company's State 3-95, drilled and cored to 6528 feet before it was plugged. No showings of importance were noted.

Water sand was cored in Sun Oil Company's White 1-C at Seabreeze-Willow Slough field, Chambers County, last week from 8400 to 8410 feet. The well was coring below 8595 feet at the end of the week.

Three important wildcats were abandoned during the past week. In the Crosby area, Harris County, Merit Oil Company's Grey Smith 1 was abandoned at 7901 feet; water sand was cored from 7749 to 7775 feet and at intervals to bottom. This well was reported to be running high structurally compared to other wells drilled in the area. Although no information was given out on J. K. Dorrance's Adamick 1 in the Blessing area, Matagorda County, it is understood that the wildcat cored no sands of importance and was plugged at 8525 feet. After drilling to Wilcox formation in Tyler County, Glenn H. McCarthy abandoned McShane 1, south of Spurger, B. B. B. & C. Survey, Section 13, at 8341 feet. Top of the Wilcox was reported at 8227 feet.

Flank Test for South Houston

The first deep flank test of the South Houston salt dome will be Commerce Oil Company's Meadowbrook Development Company 1. It is approximately 1 mile west of the producing field. The foot measurements are 466 feet out of the southeast corner of a 189.54-acre tract in the J. R. Harris Survey, Abstract 27.

Ogburn prospect, Harris County, will receive another test by O. W. Killam. He has already drilled 2 dry holes in this area. His Dodd 1 is 660 feet west and 1660 feet south from the southwest corner of Section 11 in W. C. R. R. Survey, Section 12. Material is being moved in.

At Bammel in Harris County, H. M. Harrell et al's Polley 1, C. G. McLean Survey, was coring in shale at 6250 feet at the end of the week and reported low on structure. It already has missed the gas sand found in Superior Oil Company's deep well there.

One mile southwest of production at Fairbanks, Harris County, E. M. Hailey's Fisher 1, A. Ayers Survey, cored salt water sands at 6448 to 6964 feet in the established producing horizon for the field and was shut down for orders. The hole is bottomed in shale at 6976 feet.

Northwest of production at Friendswood, Harris County, 1½ miles, Humble Oil & Refining Company failed to pick up the producing sand in Houston Development Company 1, D. Putman Survey. Cores from 5950 to 6552 feet showed sand and sandy shale, but no oil shows. Drilling continues.

West Production Company's Fee 1 at Clear Lake, Harris County, was rumored to have drilled to water sand, plugged back and tested. It is reported that the well flowed oil and water into the burning pits, but that the gas/oil ratio was high and that it would be reworked. Tanks and separators have not been connected up. The only depth available is 5810 feet. The company has not announced whether that is the bottom of the hole or the plugged back depth. Fee 1 is 2000 feet south of the discovery gas well. If Fee 1 is a commercial oil producer it will be the first for the field. It is a "tight" test.

Another failure was reported at North Cheek field, Jefferson County. Magnolia Petroleum Company's Phelan 4, 933 feet south of Phelan 1 was abandoned at 8896 feet after testing from 8454 to 8464 feet. The drill stem test showed 4700 feet of salt water. Operators have made location for Phelan 5, 933 feet north 20 degrees east from Phelan 2 being 1513 feet east of the west line of lease in the S. Stivers Survey.

Gulf Oil Corporation will test higher in Kirby C-21 at Cleveland, Liberty County. Last week the company perforated casing from 9347 to 9357 feet with 21 shots and swabbed down and the well failed to show anything of commercial importance. Kirby C-21, bottomed at 10,075 feet, is the deepest well ever drilled at Cleveland.

West of Hardin field, Liberty County, The Texas Company made location for Page 1, 876 feet north, 89 degrees, 20 minutes west and 569 feet south, 40 minutes west from the northeast corner of J. Hanley Survey.

The second oil well was completed at McCroskey field, Matagorda County, last week, flowing at the estimated rate of 500 barrels daily through a quarter-inch choke. Pierce Estate's Fee A-3, D. Fenton Survey, was completed in sands from 6616 to 6621 feet.

Sun Oil Company is swabbing on Robbins 1 at Simpsonville, Matagorda County. The wildcat was perforated from 9220 to 9250 feet. No shows were reported at the end of the week.

At Katy gas field, Waller County, Stanolind Oil & Gas Company et al's Freeman 1 was coring at 10,075 feet at the end of the week and is reported to be having trouble with gas. Freeman 1, H. & T. C. Survey, Section 99, deepest well drilled in the area, is searching for production in Sparta formation.

TEXAS GULF COAST
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
—Anahuac—		
Humble, Drought C-3	390	7101
Bryan Mound—		
Commerce Oil Co., Bryan 1	*	2070
Cedar Bayou —		
Humble, State 3-95	*	6528
Clinton—		
Stanolind, Stalmach 1	289	3829
Dickinson—		
Humble, Fream 2	595	8094
Pure, Krovetz 1	841	8094
M. Stewart 1	960	8215
Fairbanks—		
Amerada-Stanolind, Thompson 1	540	6851
Gem Oil Co., Reid 4	724	6852
Owenby Dr. Co., Gibson 1	709	6855
Winsor Oil Co., Ley 4	670	6845
Fannett—		
Gulf, Junker 2 (wo)	130	5652
Hardin—		
Woodley, Partlow 1	500	7673
Richardson 1	431	7632
Hastings —		
Stanolind, Curkeet C-28	597	6080
Paul 20	578	5710
Wooster 8	587	5540
Hitchcock—		
M. Stewart, Fee 2	480	5151
Markham—		
C. G. Hamil, Hudson 4	*	3704
North Cheek—		
Magnolia, Phelan 4	*	8896
Thompson—		
Humble, Lockwood-Sharp B-X-32	150	3534
West Columbia—		
E. W. Ogden, Pipkin 1	*	2436
Withers —		
Cockburn and Hargrove, Thompson 1	67	5546
Galveston County —		
Sun, Atkins 1, Bolivar prospect, B. Franks sur	*	7364
Harris County —		
Merit Oil Co., Grey Smith 1, Crosby area, F. Rankin sur	*	7901
Matagorda County —		
J. K. Dorrance, Adamick 1, Blessing area, I&GN sur	*	8525
Tyler County—		
Glenn H. McCarthy, McShane 1, s of Spurger, BBB&C sur	*	8341

*Failures; †Junked; ¶Million cu. ft. gas.

State to offer 153 tracts in West Texas

The Board for Lease of University of Texas Lands has announced that an auction of West Texas leases will be held in Austin on June 24.

The Board is offering 153 tracts in Crane, Crockett, Andrews and Reagan counties, most of which include about a quarter section.

South Louisiana

Attempting to complete world's deepest producer.

Jefferson Island salt dome wildcat produces oil.

Texaco Fausse Point well potential field opener.

Lake Charles.—Fohs Oil Company's Buckley Bourg 1, wildcat at West Dulac, Terrebonne Parish, was being watched with much interest June 17 as the operators washed down several thousand feet for a production test to try to open the deepest well in the world. It was drilled to 13,333 feet and is the second deepest test in the world. After setting five-inch liner at 13,333 feet, casing was perforated from 13,254 to 13,266 feet with 24 shots and 2½-inch tubing was hung approximately 200 feet off bottom. Seventy-two feet of sand from 13,208 to 13,280 feet showed 65 ohms on an electrical logging device. Adverse weather conditions hampered completion operations late June 17.

The first commercial production was established at Jefferson Island salt dome June 14 when The Texas Company completed Jefferson Island Salt Mining Company 1, northeast flank test, Section 58-12s-5e, Iberia Parish, flowing 500 barrels of 37.2 gravity pipe line oil daily after 9⅝-inch casing was perforated with 160 holes from 8170 to 8210 feet. The well was drilled to 9031 feet in salt. Top of that formation was logged at 8683 feet. The hole was plugged back to 8211 feet and cement plug was drilled to 8212 feet. Tubing pressure was 1575 pounds.

Fausse Point Looks Good

Also in Iberia Parish The Texas Company has a potential oil field at Fausse Point. State Lake Fausse Point 4, Section 35-11s-8e, tested last week, was showing oil and water. After setting cement retainer at 9000 feet the operators perforated the hole with 215 shots from 7939 to 9000 feet; 2½-inch tubing was hung at 7770 feet. After washing the well it showed 35 barrels of fluid per day, 12 percent basic sediment and water, through a 10/64-inch choke. Tubing pressure was 1300 pounds. It was estimated that the discovery well was making 1,000,000 cubic feet of gas daily. Testing continues.

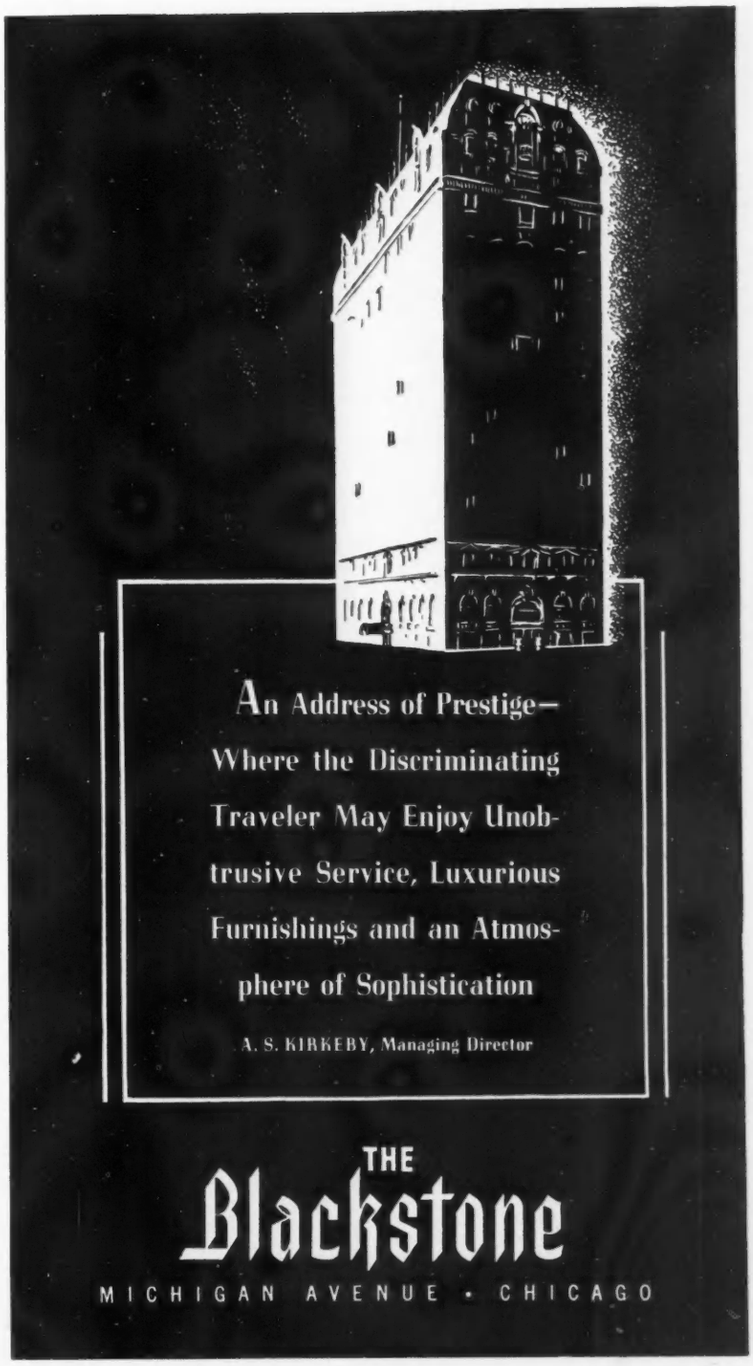
The third oil field for The Texas Company to discover in Iberia Parish in the past two weeks is at Vermilion Bay. The previous week, Vermilion Bay B-2 blew out making dry gas at 9667 feet after the cement plugs had been drilled 6 inches too deep. Last week the well was killed and while fire fighters were bleeding off some of the gas it blew out again killing two men and injuring another. At last reports the well was still uncontrolled.

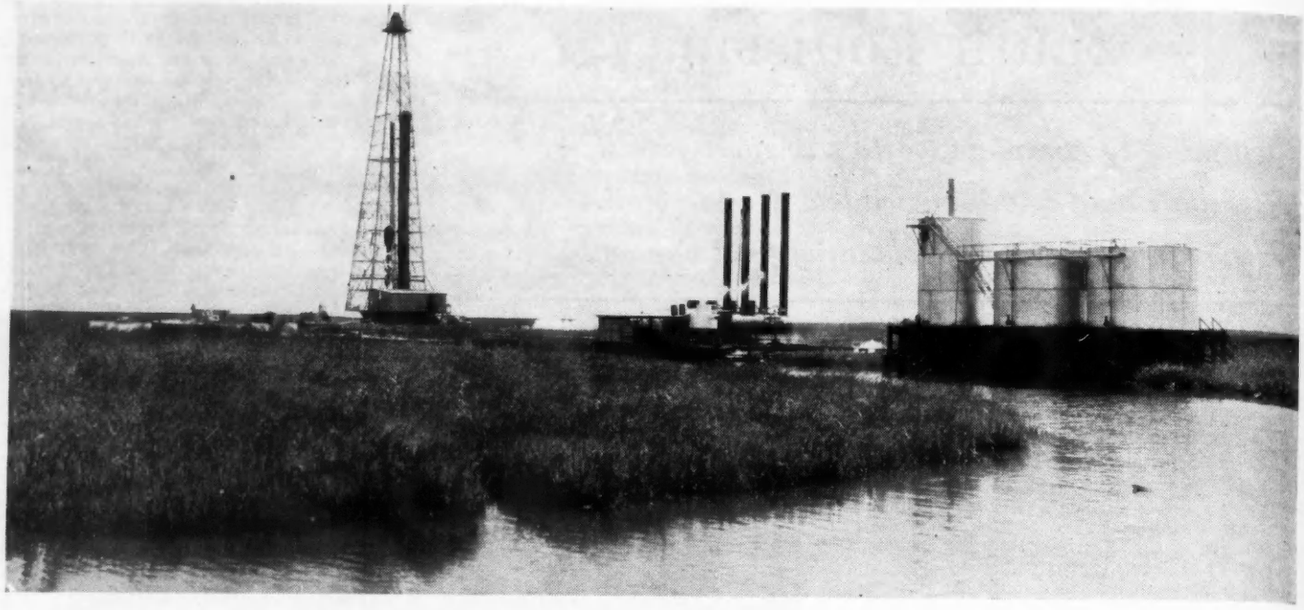
The second well at South Baton Rouge field, East Baton Rouge Parish, was down to the sand last week and running an electrical logging device. William Helis' Duplantier 2, southwest of the discovery well, Section 65-7s-1w, logged sand showing oil from 6479 to 6485 feet. The hole is bottomed in water sand at 6500 feet. Casing probably will be set for a prouction test next week.

At Raceland, Lafourche Parish, Amerada Petroleum Corporation has two wells below the established producing horizon. Godchaux 1, northwest of the discovery, was coring in shale at 10,347 feet at the end of the week, and South Coast Corporation 2, southwest of the discovery well, was coring in shale at 10,262 feet. The latter well has cored some salty sands.

Fohs Oil Company encountered trouble on State Lake Long 4 at Lake Long, Lafourche Parish, when attempting a test of a new sand. The operators were preparing to test when the packer gave way. State 4 was drilled to 10,473 feet and a drill stem test from 10,418 to 10,434 feet showed gas, gas cut mud and salt water. The well was plugged back and cement plugs were drilled to 10,158 feet.

At Timbalier Bay, Lafourche Parish, Gulf Oil Corporation was coring at





Fohs Oil Company's Buckley Bourg 1, West Dulac prospect, Terrebonne Parish, is the second deepest drilled test in the world and may gain the title of deepest producing well in the world. California now has the distinction of having the deepest producing well, which is 13,183 feet, but Bourg 1 was being tested at 13,266 feet.

7080 feet in State PP-4 after logging broken formations showing oil and gas between 6998 and 7008 feet. Gulf's second well at Quarantine Bay, State QQ-4, was coring in shale at 10,476 feet at the end of the week. Odors of oil and gas were logged from 10,375 to 1037 feet, 10,420 to 10,422 feet and from 10,430 to 10,433 feet.

New Sand at Jeanerette

Herton Oil Company was preparing to make a drill stem test of a new sand at Jeanerette, St. Mary Parish. Roanies Sugar 1-A, Section 38-13s-9e, was perforated with 20 holes from 10,390 to 10,396 feet. The well was drilled to 10,404 feet and logged sand showing oil from 10,304 to the bottom.

Another deep hole was abandoned at Lirette field, Terrebonne Parish, last week when Union Producing Company plugged Fee 2, Section 50-19s-19e, at 11,924 feet.

Lafitte Extended

Lafitte field, Jefferson Parish, was extended south by The Texas Company's Rigolets 9, Section 29-17s-24e. It came in flowing 862 barrels of 35.7 gravity pipe line oil daily through a ⅜-inch choke, with a tubing pressure of 600 pounds from casing perforated at 10,090 to 10,122 feet. The operators have spudded L. L. E. Lafitte 11, Section 9-17s-24e.

Little Cheniere prospect, Cameron Parish, looked disappointing last week when Humble Oil & Refining Company abandoned Miami Corporation 1-B, Section 7-14s-6w, at 10,895 feet. Salt water sands were logged in the wildcat from 8630 to 8675 feet. However the prospect will be tested again by Ash Robinson. He has spudded Mermantau Land and Minerals 1, 330 feet north and 662 feet west of the southeast corner of Section 30-14s-6w, Cameron Parish.

On the West Gueydan prospect, Vermilion Parish, Magnolia Petroleum Company made a drill stem test on J. B. Ferguson 1, Section 5-12s-2w, at 7150 feet. It showed 8 pounds pressure and 17 stands of mud and fresh water from 7140 to 7150 feet in 15 minutes through quarter-inch chokes. Ferguson 1 was drilled to 9144 feet and was plugged back.

Five Arkansas starts

El Dorado. — Five drilling permits were authorized last week by the Arkansas Board of Conservation, as follows: Columbia County (Village)—Standard Oil Company of Louisiana, Tena Crumpler 1, 660 feet N and W SEc SW NW 15-17-19; Miller County (Rodessa)—F. W. Burford, H. J. Mitchell 2, located 330 feet S and E NWc NE NW 11-20-28; Union County (Schuler)—Lion Oil Refining Company, Marcus 2, located 330 feet N and W SEc Lot 3, SW 18-18-17; Marcus 3, located 330 feet N and E SWc Lot 5, NW 18-18-17; Union County (Strong)—Modisett Drilling Company, Union Sawmill Company 2, C SW NE 8-18-12.

SOUTH LOUISIANA Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Abbeville —		
Continental, Hebert 1	30	8100
Darrow—		
Humble, Community 18	684	6958
Lafitte—		
Texas Co., Rigolets 9	862	10,214
Leesville—		
Texas Co., Leesville 68.....	932	6250
Lirette—		
Union Prod. Co., Fee 2.....	*	11,924
Venice—		
Tide Water, Manhatten Fruit Co. 7	510	7205
Ville Platte—		
Continental, Ledeau and Haas 1..	520	9070
Cameron Parish—		
Humble, Miami Corp. 1-B, Little Cheniere area, 7-14s-6w	*	10,895

*Failures; †Junked; ¶Million cu. ft. gas.

Bethany test drilling at 8189 feet

Shreveport— The Texas Company's Claude Adams 1, Thomas Cox Survey, deep test in the old Bethany field, Panola County, Texas, was drilling hard sand at 8189 feet in lower Marine last week. With elevation of 287 feet, this test topped lower Marine at 7792 feet, 348 feet higher on that marker than Magnolia Petroleum Company's E. A. Hull 2, Thomas Applewhite Survey, east of Carthage in the same county, but several miles southwest of present test. The latter test was lost when drill pipe hung below 8300 feet.

Louisiana issues 28 permits for new wells

Shreveport, La.—Twenty-eight drilling permits were authorized last week by the Louisiana Conservation Commission. Ten were in North Louisiana, divided among the following parishes: Caddo, 3; Lincoln, 1 (Lisbon); Morehouse, 1; Sabine, 1; Union, 1; and Webster, 3 (all in Cotton Valley).

The 18 in South Louisiana were divided among the following parishes: Acadia, 1; Ascension, 1; Calcasieu, 2; Cameron, 2; East Baton Rouge, 1; Evangeline, 2; Iberia, 3; Jefferson, 1; LaFourche, 2; Plaquemine, 1; St. James, 1; and Terrebonne, 1.

Kansas gets 28 new starts and completions

Wichita.—Drilling in Kansas last week accounted for 28 completions against 28 wells started. The completion list included 19 producing oil wells with total initial output of 17,758 barrels, and nine dry holes. By counties the new locations were divided as follows: Stafford, 8; Barton and Rice, 5 each; Butler, 4; Cowley and Russell, 2 each; Ellis, Geary, Kearney, Marion, Ness, Riley, Rooks and Woodson, 1 each.

North Louisiana Fields

Wildcat near Cotton Valley yields 41.5 gravity oil. Lisbon outpost is acidizing Glen Rose.

Shreveport.—Stanolind Oil & Gas Company's Pardee Company 1, C SW NE 36-21n-10w, completed recently 1¾ miles southeast of previous gas-distillate production from Lower Marine, in the Cotton Valley field, Webster Parish, making 39.5 gravity oil, refused to flow through tubing during numerous attempts last week and operators finally decided to let it produce through casing choke. The gravity of the oil was reported to have been corrected to 41.5 Baume.

On a flow test through ¼-inch and ⅜-inch chokes on the casing, the well flowed a total of 309 barrels in 6 hours, the gauges by hours being: first hour on ¼-inch choke, 42 barrels; second hour, same sized choke, 43 barrels; third hour, same size choke, 35 barrels; fourth hour, through ⅜-inch choke, 62 barrels; fifth hour, through ⅜-inch choke, 67 barrels; and sixth hour, through same sized choke, 60 barrels. The gas/oil ratio was 600 to 1. Operators were arranging to produce it through the casing.

Mid-States Oil Company's Welori Lumber Company 1, NW NW 3-20n-10w, one mile south of Cotton Valley deep production was drilling in black shale at 8397 feet, checking 70 feet lower than Standard of Louisiana's Stewart 1, Section 34-21n-10w, outpost gas-distillate Lower Marine well in the southwest edge of the field but indicative of making an oil well in view of Stanolind's Pardee Company 1, whose total depth is 8635 feet.

E. T. Oakes' T. M. Kilgore 1, NE SE 28-21n-5w, 1¼-mile northwest outpost from Lisbon production and which logged 13 feet of saturated basal Glen Rose lime only to have trouble with casing hole under casing, was acidized last week and when opened flowed 4 hours at the rate of 35 barrels per hour when cement around liner gave way. This will be recemented.

Lisbon had an average week in number of new completions, adding 6 new producers. A southwest edge location was among 5 new locations announced, this being Prairie Oil & Gas Company of Shreveport's Lloyd 1, NE SE 10-20n-5w.

Five new locations were announced in the Cotton Valley field, Webster Parish, which also accounted for 5 new wells, 3 in the Lower Marine and 2 in the Travis Peak. Two new locations were also announced in a new southeast offshoot of the old shallow Zwolle field, Sabine Parish, Section 18-7n-12, and 2 were announced in the Pullman area, DeSoto Parish, 1 in Section 5-11n-11w, and the other in Section 25-11n-11w.

Quality Production Company of Big Spring, Texas, made location for a 3500-foot wildcat test between Converse and Zwolle, at Long-Bell 1, NE SW 5-8n-13w.

Due to heavy showing of gas that for a time threatened to blow out, W. L. McClanahan decided to run formation tester at 3027 feet at Frost Lumber Company 1, SE NE SW 22-9n-13w, on the east edge of the shallow Converse field, Sabine Parish, that produces from 1600 to 2050 feet. This test has been planned for 5700 feet.

C. L. Thompson and associates having reached 4567 feet in Woodward 1, NE SW 10-6n-3w, are arranging to install heavier rig to deepen to 6500 feet. The formation is sandy shale of the Wilcox.

The first location made in several weeks for the Louisiana side of Rodessa was announced last week by Union Producing Company for Harris 8, located 650 feet north and 1965 west SEc 10-23n-16w, Caddo Parish. Another location was made in the newly opened 4200-foot field at Blue Lake, Sabine Parish, by C. C. Crews and associates of Tyler, Texas, at Bowers-Mansfield 1, NW NW 27-7n-14w, on a 160-acre lease.

In the Blue Lake area, F. W. Martin & Company's Sabine Lumber Company 1, NE NE 23-7n-14w, after drilling to 4500 feet and running electrical logging device, was running formation tester at several horizons between bottom of the hole and 3600 feet, showings having been reported at 3850 feet and 4200 feet, although the test was drilled "tight."

Having practically completed eight 160-acre units in the Dubberly gas-distillate field in Township 18 north, Range 8 west, Webster Parish, J. P. Evans, discoverer of that field last week was preparing to transfer these units to Union Producing Company before July 1. Union Producing some time ago agreed to take this acreage if it could be unitized. Location for a proposed 9000-foot test is expected to be made at an early date for Mrs. N. P. Davis 1, SWc 28-18n-8w.

Dubberly field was found productive of gas and distillate in the Glen Rose in 1936, and three producing gas-distillate wells were completed in that horizon which have been closed in for lack of pipe line and marketing facilities.

More Deep Drilling

Recent discovery of Lower Marine oil production on the southeast flank of the Cotton Valley field, Webster Parish, and of gas-distillate production at the 9000-foot level in the old shallow Shongaloo field of the same parish, has given impetus to search for deeper production in known structures in North Louisiana.

Magnolia Petroleum Company made location for H. M. Branton 1, NE NE 6-22n-9w, Webster Parish, one mile south of the same company's Frank Sexton 1, C SW NE 32-23n-9w, recently completed as a gas-distillate producer at Shongaloo after casing was perforated from 8990-9010 feet. The company last week also started moving rig to location for Pardee Company C-1, NE NW NE 17-23n-11w, a proposed deep test north of the old shallow Cartersville field and on a geophysical high. Contract depth is 8500 feet. Assembly of the block was reported in THE OIL WEEKLY several months ago.

A forced abandonment of a well occurred last week in the deep Cotton Valley field when Magnolia Petroleum Company and W. G. Ray abandoned Stewart-Crichton 1, SE NW 33-21n-10w, at 6209 feet. The test failed to find production in the Travis Peak (Holloway sand), and as the lease already had its full quota of lower Marine (Bodcaw sand) wells at 8000 feet, it could not be deepened to that horizon and completed under present spacing rules.

NORTH LOUISIANA Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Bienville Parish—		
Producers O&G Co., Locke 1, 9-15n-10w (sec. completion)	*	5406
Caddo Parish (Pine Island)—		
L. T. Davis, Stiles 4, 17-21n-16w	80	1028
Magnolia Pet. Co., Dillon Hrs. 26, 23-21n-15w	30	1600
Claiborne Parish (Lisbon)—		
Gulf Ref. Co., M. Patton 4, 11-20n-5w	1032	5284
Magnolia Pet. Co., Sallie Lloyd 2, 2-20n-5w	960	5297
Oden & Taylor, Henry 1, 29-21n-4w	192	5136
Sklar Oil Co., Kilgore 2, 11-20n-5w	1600	5271
The Sloan & Zook Co., Patton Est. 1, 1-20n-5w	528	5270
De Soto Parish (Naborton-Bull Bayou—		
The Texas Co., Z. White et al 2, 24-12n-12w	¶¼	890
Franklin Parish (Wildcat)—		
Southern Star Pet. Co., Grayson 3, 36-12n-6e	*	2802
Grant Parish (Urania)—		
R. D. Bevill, Tr., Holmes 3, 17-9n-1e	40	1608
K. M. Pet. Corp., Holmes 1, 20-9n-1e	*	1635
La Salle Parish (Urania)—		
F. W. Germanson, D. King 1, 25-10n-1e	3	1549
Lincoln Parish (Lisbon)—		
Harry Fotiades, J. J. Henry 1, 5-20n-5w	1440	5246
Webster Parish (Cotton Valley)—		
H. L. Hunt Oil Co., J. Babb 7, 14-21n-10w	95	5768
Bodcaw Stewart 1, 33-21n-10w	300	6013
Magnolia Pet. Co. & W. G. Ray, Stewart-Crichton 1, 33-21n-10w	*	6209
H. I. Morgan, Hope A-1, 25-21n-10w	240	8216
Ohio Oil Co., Sandlin 1, 27-21n-10w	432	8153
A. G. Oliphant, Stewart & Stewart 1, 33-21n-10w	540	8532

*Failures; †Junked; ¶Million cu. ft. gas.

Proposed Rodessa gas/oil ratio reduction opposed

A decrease of 1000 cubic feet in the maximum gas/oil ratio for wells producing from the Dees-Young horizon of the Rodessa field was requested by Union Oil Producing Company and R. W. Norton at a hearing last week. This would mean a maximum ratio of 2500/1 for wells now producing in that horizon.

Although the oil companies offered no evidence at the hearing, they stated that experience had shown that a maximum ratio of about 2100/1 was normal for this area.

The program was opposed by American Liberty Oil Company and other independent producers in the field.

Union attorneys also suggested that the commission require at least one meter on every lease in the field to measure the gas which is withdrawn daily. They expressed the opinion that this would give a reasonably accurate index of the gas/oil ratio of all wells on the lease. It was pointed out that

the same horizon in Louisiana had a maximum ratio of 2000/1 and that officials there had issued an order requiring meters.

Comparative allowable figures for the field in the two states were injected into the record when American Liberty protested that Texas operators were at a disadvantage. They introduced figures to show that Louisiana is permitted to produce 4.25 barrels per acre per day while Texas produces 3.59 barrels. They also objected to the fact that the pressure factor in Louisiana was higher than the pressure factor used in fixing Texas allowables.

S. L. McDowell, representing American Liberty, said that most of Union Producing Company's property is in Louisiana. Thus it would benefit by any cut in Texas, the witness inferred.

Arkansas Fields

Standard's McKean 2 indicates Buckner extension. Production likely in east outpost at Schuler.

El Dorado, Ark.—Quarter-mile extensions loomed last week in both the Buckner and Schuler fields. In Buckner, Standard Oil Company of Louisiana's J. P. McKean 2, C SW SE 7-16-22, LaFayette County, had cemented seven-inch casing and was ready to be drilled in and tested in Permian lime. Depth is 7257 feet. The test is one-fourth mile west of four present producers, all owned by Standard of Louisiana, and will be the first producer in that field in LaFayette County, the other wells being in Columbia County.

In Schuler, Union County, one-fourth mile east of production, Jones, Murphy and Hurley's Rodgers 1, SW SW 16-18-17, was running seven-inch casing after logging Jones sand (lower Marine) from 7570 to 7612 feet. Total depth is 7635 feet.

Phillips Petroleum Company will complete Marks 3, Section 18-18-17, in the Permian lime at Schuler, it having logged Permian lime with saturation from 7608 to 7684 feet. Final casing has been set. Total depth is 7784 feet.

Daily average production last week in Schuler was 9360 barrels, of which Root Petroleum Company bought 6060 barrels and Lion Oil Refining Company 3300 barrels, the latter taking only oil from its own wells or those in which it owns an interest. These two companies are the only present purchasers of Schuler crude. The daily average production from 46 wells in the Jones (lower Marine) sand was 7025 barrels, or a per well average of 153 barrels. Eleven wells producing from the Morgan (Travis Peak) sand yielded 1245 barrels or a per well average of 113 barrels. The one well making distillate from the Permian (Reynolds) lime yielded a daily average of 475 barrels and the two oil producing wells in the Permian lime had a combined daily average of 615 barrels. The Permian lime is not prorated at present. There were sixty wells from all three horizons of the field on production, with a field average per well of 156 barrels.

Start Second at Village

Standard Oil Company of Louisiana spudded its second test at Village, Columbia County, Tena Crumpler 1, C SW NW 15-17-19, and has made location for L. Harris 1, C NE SW 15-17-19.

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ARKANSAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Miller County (Rodessa)—		
Kroll & Travis, Dickinson 2, 10-20-28	1100	6171
Red Iron Drlg. Co., Mitchell 1, 2-20-28	720	6182
Texarkana Drlg. Co., Capps 1, 10-20-28	240	6201
Union County (Schuler)—		
Lion O. R. Co., Mayfield 3, 18-18-17	480	7720

•Failures: †Junked; ‡Million cu. ft. gas.

However, it is reported that Standard of Louisiana plans to "farm out" to the highest responsible bidder a number of its leases on which immediate drilling obligations exist. Standard has been active recently leasing around Section 34-17-13, Union County, north of the shallow Urbana field and also has secured rights on deep horizons from some companies owning the leases who retained their shallow minerals.

In townships 16 and 17 and 19, ranges 12 and 13, Union County, seven major companies have seismic units at work.

Phillips Petroleum Company is expected to drill a test soon on acreage it owns around Sections 4 and 5-17-18, near Mount Holly where recently there was considerable geophysical exploration and leasing.

Joe Modisett is spudding his wildcat test in Union County near Strong on a geophysical high. It will be a deep test. It is Union Sawmill Company 2, (formerly carried No. 1), C SW NE 8-18-12. Modisett also is ready to spud the first of a series of nine tests which Tenn-Ark Oil Company will drill in northeast Arkansas and West Tennessee. First location in Craighead County, near Jonesboro, Tulley Lumber Company 1, Section 35-14n-1e, which will go to 3000 feet and if formations check favorably will be taken deeper. The series of tests will range from 3000 to 7000 feet in depth. Approximately 60,000 acres of Tulley Lumber Company land is in the nine blocks this company has under lease, which total over 100,000 acres.

Shell farms out lease near Magnolia to Vaughn

El Dorado, Ark.—Shell Petroleum Corporation has farmed out to Grady H. Vaughn, Dallas independent operator, the former's 92-acre Garrett lease in Section 14-17-20, Columbia County, southeast of the Atlantic Refining Company's Barnett 1, SW SE NE 14-17-20, recently completed in Permian lime at 7650 feet to open the Magnolia field. Consideration calls for drilling two tests to the Permian lime, the first to be started within 30 days, location to be C NE SE 14-17-20. The second test shall start within 30 days of completion of the first. Shell retained ¼ of ⅞ royalty until Vaughn is reimbursed for drilling and equipment after which the lease shall be operated on a 50-50 basis.

Sun ships reflection unit to Osceola County, Florida

Pensacola, Fla.—Sun Oil Company has sent a reflection seismograph unit under Paul A. Keeling to Osceola County, Florida, to make an extended and extensive survey of that area. The party will have headquarters at Kissimmee.

William G. Blanchard, geologist, left Miami recently for a prospecting tour through the Everglades in a Swamp Buggy. He is being assisted in his survey by F. F. Fair and E. R. Hutcherson.

Illinois Developments

Hitherto untested Devonian sand has oil in Basin.

Big North Olney well does not offset disappointments.

Olney, Ill.—Carter Oil Company's W. C. Cos 1, Section 14-4n-5e, Oskaloosa Township, Clay County, promised the first commercial production from the deep Devonian formation for the Illinois Basin when it started flowing last week after acid treatment. The flow, amount of which was not announced by company officials, was obtained by occasional swabbing agitation. Of greater significance than actual production at the wildcat is the fact that the hitherto untested Devonian in the Illinois Basin contains oil.

Production is from the Niagran in the Devonian limestone, where saturation was streaked from 4247 to 4316 feet, with saturation solid and porous from the latter depth to 4326 feet.

The Cox well was one of the past week's two wildcat strikes. J. V. Wicklund Development Company's W. R. McCauley B-1, Section 7-2n-9e, southwest Decker Township, Richland County, flowed 75 barrels of oil in 20 minutes into a 500-barrel storage tank. The bit had penetrated only 2 feet of McClosky saturation, the formation having been topped at 2971 feet, when the flow necessitated a stop in drilling and installation of a control valve. Work was started immediately on four more 500-barrel tanks and Owensboro Pipe Line Corporation started connecting the well to its gathering system. It is to be deepened later.

The wildcat is 2½ miles east of Pure Oil Company's highly successful southeast Clay City Township field, across the Clay-Richland County line, 3½ miles southwest of the Mammoth pool in north Decker Township, Richland County, and 4 miles southeast of the Bunny Travis lease. It is two miles north of the Wayne County line and 1½ miles east of the Clay County line. On the Muddy and Little Wabash river bottoms, the area is accessible to drilling equipment only between June and November.

Pure Oil Company was clearing locations and erecting derricks for two offsets: Roy Van Matre A-1, Section 7-2n-9e, to the north of the discovery, and El Ashmore A-1, same section, an east offset. On a 20-acre plot to the south, the Wicklund company was preparing location for W. R. McCauley 2, Section 7-2n-9e.

Northwest of the W. R. McCauley 1 in Clay County, directly east of the Travis wells, Eureka Oil Company's H. Siebens 1, Section 35-3n-8e, a wildcat, was attempting to dislodge a drill stem stuck at 2996 feet. When the trouble is remedied, the test will core for the McClosky.

In the recently opened North Olney pool, Richland County, Muhlbach's G. O'Donnell 1, Section 26-4n-10e, flowed 1407 barrels initial after treatment with 5000 gallons of acid. This test cored a porous 9½-foot saturation a week ago from 3028 to 3037½ feet, but was slow in coming in as tubing had been set too low. It is a west offset to Pyramid Oil Company's University of Chicago (Bird Haven) 1, pool opener that had an initial daily production of 1010 barrels without acid treatment.

Pyramid company's G. Sly 1, Section 22-4n-10e, northwest of the pool opener, flowed an even 1000 barrels in its first 16 hours, filling available storage. It had been treated with 6000 gallons of acid. This test found a porous 7½-foot McClosky saturation. Nearing the completion stage was The Texas Company's O. Zerkle 3, Section 23-4n-10e, which cored 12 feet of McClosky sand, of which 8 feet were described as "very porous."

Three other wells in the North Olney area were shut down below the McClosky level, all having found that horizon more or less dry. Whether they would be carried deeper or given an acid treatment in the McClosky formation in an effort to bring them into production remained in doubt. They are: Pyramid Oil Company's University of Chicago (Bird Haven) 2, two locations northeast of the pool opener, bottomed at 3137 feet; The Texas Company's O. Zerkle 1, Section 23-4n-10e, at 3170 feet, and the same company's O. Zerkle 2, Section 23-4n-10e, at 3222 feet. On the basis of tests thus far drilled, the trend in the North Olney pool appears to be either south, west or northwest.

Two additional wells were drilling, one had derrick up and two were locations in the North Olney area. Sam Raitman's G. O'Donnel 2, Section 26-4n-10e, was drilling below 1500 feet; Mitchell & Ruwe's (Sylvester et al's) A. E. Bunn 1, a half mile south of present production on Section 26-4n-10e, was drilling at 2400 feet, and David L. Coolet et al's W. Bellinger 1, Section 34-4n-10e, within the Olney city limits, had derrick up. Locations were: Fortney Oil Company's E. G. Miller 1, Section 26-4n-10e, and Pyramid Oil Company's E. J. Houser 1, Section 15-4n-10e.

Line was being completed to Kingwood Oil Company's F. Graham 1, wildcat 1½ miles north of Flora on Section 13-3n-6e, Clay County, which opened a new pool a week ago. A 10,000 gallon acid treatment was completed and the well was pumping at the rate of 40 barrels an hour. No offsets to the pool opener have yet been started.

Beecher Extended

A 2-mile southwesterly extension to the Beecher City field of Fayette County was furnished by the Yakey 1, Section 6-7n-3e, Avena Township, which reported 29 feet of Benoist sand saturation below 1540 feet. Twenty other producers in this shallow field had been drilled in Louden Township. According to Dr. M. M. Leighton, chief of the Illinois geological survey, the

field is probably 5 miles in length and of undetermined width. He points to its importance because of production from both the Benoist and Cypress sands, with saturations also reported in two other formations in the upper Mississippian series.

Second unsuccessful attempt to obtain production in Perry County during the current boom was recorded last week when American Petroleum Corporation's United Electric Mine 1 was abandoned at 1760 feet after going through the Stein, Benoist and McClosky formations, finding all dry.

National Consumers Oil Company was moving in equipment for a Cumberland County wildcat test on the Harrison Ward farm, on U. S. Highway 40, between Greenup and Jewett. Cable tools will be used so that tests can be made of every potential producing sand encountered. The McClosky will be the well's ultimate depth unless commercial production is obtained at a higher level.

Six miles from the Beecher City field discovery well, Penn-Illinois Oil & Gas Corporation was drilling below surface pipe on its A. Niehoff 1, Moccasin Township, Effingham County.

ILLINOIS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Clinton County—		
J. G. Bailey et al, G. Kuhn 1	700	1368
Bell, Riley & Lacy, L. Budde 1	350	1376
E. C. Lehman, Garbe 1	200	1372
S. McGee, Chambers 1	150	1385
Bryant & Casseday, Geo. Kailen 1	60	1380
Kesl & Fox, Noe 1	*	1404
Fayette County—		
Carter Oil Co., T. N. Logsdon 1	93	1505
Marion County—		
J. Gill, Trust Building & Loan 1	450	1367
Crosby & Gill, Winkler 1	250	1383
Case & Case, P. Gentiline 1	165	1396
Phelps & Johnson, Dunbar Estate 1	*	1402
Richland County—		
Pure Oil Co., J. O. Coen 12	24	3000
White County—		
Mazda Oil Corp., Meade 1	*	3210

*Failures; †Junked; ¶Million cu. ft. gas.

Rules state can retain homesteader's minerals

The Michigan supreme court this week affirmed a lower court (circuit) decision in ruling that the state may retain mineral, oil and gas rights on lands conveyed to homesteaders.

The decision was made in an appeal by plaintiffs in the suit of Lena Rathburn, widow of a Gladwin County homestead land owner, against the state and 6 development companies.

Eastern States

Birk City (Kentucky) extended quarter mile northwest.

New York gets Oriskany gas field in Allegany County.

Pittsburgh.—A. E. Roscoe et al's O. Benham 1 cored 15 feet of McClosky saturation, promising the eighth oil well in the new Birk City field, Henderson County, Kentucky. H. & H. Company, drillers of the well, established a new drilling record for the area. The derrick was erected May 31, drilling started below surface pipe on June 5 and the McClosky topped a week later. Hole is bottomed at 1886 feet. A good showing was also encountered at this test in the Jett sand, which was drilled through in favor of expected heavier production in the McClosky. Location is a quarter mile northwest of the present proven edge of the field. Seven-inch casing has been set and cemented, and two 500-barrel storage tanks installed preparatory to drilling the plug.

Six miles from the Birk City pool, Petroleum Exploration Corporation's Southern Trust Company 1, near Reed, drilled by Miller & Shiarella, found water in the Jett and Bethel sands and was dry at the lower McClosky level. Bottomed at 2000 feet, it was plugged and abandoned.

Two tests were completed in the Birk City pool last week: Snowden & McSweeney and Cumberland Petroleum Company's F. Dempewolf (T. Jones) 2 was pumping about 100 barrels a day after acidization, considerably less than the No. 1 by these operators which initialled 500 barrels daily. W. E. Hupp et al's J. Gatewood 2, offset to Carter Oil Company's O. L. Boswell 1, that had an initial of 500 barrels daily, and 544 feet from the same operator's J. Gatewood 1, started swabbing after being given acid treatment.

Liner pipe has permanently cased off Hoosier Drilling Company's C. T. Blackwell 1, discovery well drilled on April 22, and which has since suffered several cave-ins below the casing point. It was making close to 400 barrels a day last week, and as yet has not been given acid treatment. This company's Blackwell 2 was making 280 barrels daily last week, after acid treatment.

Attracting unusual interest as the first Birk City area well on the Daviess County side of the Green River, Major Oil Company's O. Greer 1 was drilling below 1575 feet, expecting to top the McClosky late last week.

In Indiana, Felmont Corporation's J. R. Riggs 1, Section 36-8n-9w, Hamilton Township, Sullivan County, encountered salt water at 4160 feet and was abandoned. Started last January, the test is believed to be the deepest ever drilled in Indiana. Sun Oil Company will bring in a rotary rig for a second test on its Marrs Township, Posey County, block of leases. Its first test—S. Dietz 1, Section 1-7s-12w—is producing about 25 barrels a day, bottomed at 1744 feet.

New York Gas Field

Confirmation of a new Oriskany sand gas pool in Allegany County, New York, was given by Empire Producing Company's Dan Clark 1, Willing Township, which gauged 19,000,000 cubic feet. Location is 1 mile from Belmont Quadrangle Drilling Company's pool opener drilled 3 months ago with an initial of 11,000,000 cubic feet. The first well topped the Oriskany at 4822 feet, while last week's completion encountered the pay formation 50 feet deeper. The Tully lime at the Clark 1 was between 4240-92 feet, with the top of the Onondaga at 4822 feet. The wells are on the Sharon anticline, 5 miles northeast of, and on the same structure as the State Line field of Willing and Alma Townships.

EASTERN FIELDS
Completions

KENTUCKY

Company, Well and Location	Init. Prod. Bbls.	Depth
Breckenridge County —		
A. V. Smith et al, Greene Bros. 9	*	....
Daviess County —		
W. E. Hupp et al, Robt. Jones 9	30	....
McDonough & Co., P. Cooper 4	25	767
Dougherty & Ellis, C. E. Leet 3	*	1165
Henderson County—		
Hoosier Drilling Co., C. T. Blackwell 2	500	....
Kentucky Natural Gas Co., O. Haynes 1	*	2100
McLean County—		
Ellis & Huff, Yates Bros. 2	5	970
Muhlenberg County—		
Peerless Oil Co., C. C. Gossett 1	*	2495
Ohio County—		
Gregory & Evans, L. L. Trogdon 1	*	970
Edwards & Gregory, A. Taylor 1	*	1600
A. Teller et al, C. Medcalf 6	*	....
Mecca Oil Co., L. Bartlett 5	*	570
Webster County—		
Powell Drilling Co., A. B. Sellers 4	¶1.68	900

OHIO

Athens County —		
C. W. Nuzum, J. B. Niggemeyer 1	¶.25	750
E. N. Williams, J. Shuler 1	¶.09	1730
Bern Oil & Gas Co., W. G. Selby 10	*	925
Holmes County—		
Ohio Fuel Gas Co., J. B. McKinley 1,	¶.60	2907
Knox County—		
Preston Oil Co., M. McCament 2	¶3.40	3144
Clamount Oil & Gas Co., V. Wonders 1	¶1.00	2800
Licking County—		
McClay Bros., U. B. Porter 4	100	3120
G. S. Lacknett et al, W. W. Reynolds 6	20	810

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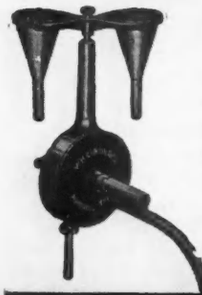

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No. 3480 W. H. CURTIN & COMPANY, INC. HOUSTON, TEXAS

Company, Well and Location	Init. Prod. Bbls.	Depth
Wm. Stricker et al, E. H. Davis 1	¶.15	750
Davis, C. B. Hook 1	*	2692
Lorain County—		
Wm. Dempsey, J. H. Lyons 3	*	2398
Harry Dempsey, Cleveland Trust Co. 1	*	2438
Medina County—		
Baldwin, B. A. Bidle 1	*	363
Meigs County—		
Smith, L. Goodwin 1	¶.20	862
Monroe County—		
Hanlan & Schoy, J. R. Amos 1	10	827
Lumbatis, Watt Ullman 1	*	1780
Morgan County —		
Schwartz & Dunn, A. A. Boileau 5	½	86
A. A. Boileau 6	½	86
Muskingum County—		
Gas Producing Co., E. F. Boyce 1	¶.50	4279
Noble County —		
Chaseville Gas Co., E. G. Gallagher 1	¶.07	1532
Vinton County—		
Kelch Bros., V. B. Heering 1	¶	678
Washington County —		
E. F. Montgomery, C. F. Gross 3	1	920
Otto Heldman, M. Epler 2	¶.13	1181
Hope Natural Gas Co., J. H. Greenless 1	¶.10	1359
Coal Creek Oil & Gas Co., T. Emmons 1	*	315
D. T. Orndoff, P. Roe 3	*	1522
Fisher Farm Oil Co., R. Martin 1	*	731

WEST VIRGINIA

Boone County—		
Rich Fork Oil & Gas Co., Croft Land Co. 4	¶.08	4160
Cabel County—		
Skidmore & Jett, L. D. Kress 2	¶2.00	3260
Calhoun County—		
Richter Oil Co., E. McCray 5	50	1889
Gilmer County—		
C. F. Wilson, R. E. Campbell 1	¶.10	1670
Kanawha County—		
Columbian Carbon Co., N. H. Cavender 1	¶.21	5188
Lewis County—		
Mud Lick Oil & Gas Co., N. J. Rinehart 1	¶.20	1390
Nicholas County—		
Hope Natural Gas Co., Federal Coal Co. 7795	¶.04	3685
Ritchie County—		
Reno Oil Co., G. B. Rossom 3	2	1800
E. S. Woodyard, W. & D. Bradford 1	3	872
W. H. Bickel, Printy 1	2	2040
Tyler County—		
E. C. Hartman, H. Martin 1	3	1770
Wirt County—		
W. C. Patterson, Robertson Petroleum Co. 20	2	485

PENNSYLVANIA: Bradford District

Mix Creek Oil Co., Fee	2	....
First National Bank, Pt. Allegheny, Fee	5	....
Ryder Scott Co., Fee	7	....
South Penn Oil Co., Reservation	1	....
Bi-State Oil Corp., Fee	4	....
Tapp, Gallets & Buffington, Trs., Fee	2	....
Tapp Bros. Oil Co., Fee	3	....
Repp & White, Wright	1	....
Marion L. Boyle, Duke	2	....
Lane 1 et al, 371 Bing	2	....
Daly Oil Co., 412 Bing	3	....
Forest Oil Corp., 3 wells	3	....
Niagara Oil Corp., 14 wells	14	....
Forest Petroleum Corp.	1	....
Bradford Transit Co., 28 wells	28	....
Penn Valley Crude Oil Corp., Redfield	8	....
C. M. Lippert et al, Lippert	3	....
Brink & Brink, 268 Bing	1	....
Hardwick, Ride & Tuohy, Fisher	2	....

PENNSYLVANIA: Butler-Armstrong Area

R. R. Shakely et al, B. Christley	20	....
Gettman & Co., B. Christley	¶	....

PENNSYLVANIA: Middle District

Strong Oil Co., Strong Oil Co., Milton	¼	....
S. L. Allaman, S. L. Allaman	2	....
M. M. Master, Rickenbrode	2	....
Weaver Trust Estate, John Smreaker	¶	....
M. E. Bolles, E. M. Bolles	½	....
South Penn Oil Co., J. H. Osmer	1	....

PENNSYLVANIA: Bradford District Water (Pressure) Wells

F. J. Eisert, Loop Estate 1 well	....	....
N. V. V. Franchot, Rounds, 1 well	....	....
Victory Oil Co., Wright, 2 wells	....	....
Lane 1 et al, 371 Bing, 1 well	....	....
Grant & Mohan 3, 484-5 Bing, 1 well	....	....
Grant & Mohan 3, 486-7 Bing, 1 well	....	....
Andrus & McDowell, 329 Bing, 1 well	....	....
Forest Oil Corp., 5 wells	....	....
Niagara Oil Corp., 11 wells	....	....
Forest Petroleum Corp., 3 wells	....	....

PENNSYLVANIA: Middle District Air (Pressure) Wells

National Petroleum Co., Caldwell	....	....

NEW YORK-PENNSYLVANIA: Gas Field

New York State Natural Gas Co., Wheatcraft	gas	....
New York State Natural Gas Co., Van Etten	*	....
French et al, H. O. Perry	*	....

PENNSYLVANIA

Beaver County—		
Oak Oil & Gas Co., Mary M. Bartlet 4	1	....
Washington County —		
J. Heidelmeir, J. M. McMurray 1	2	997

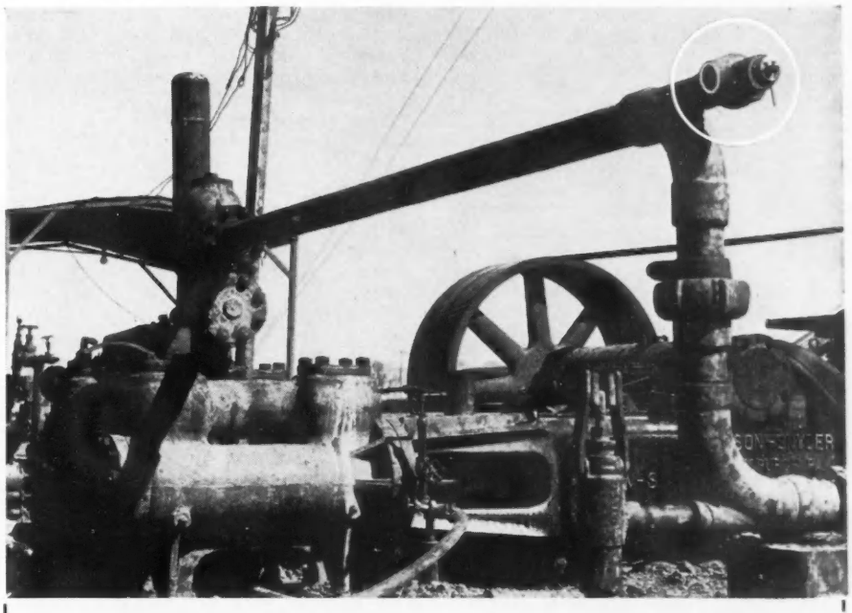
INDIANA

Sullivan County—		
Felmont Corp., J. R. Riggs 1	*	4160

NEW YORK

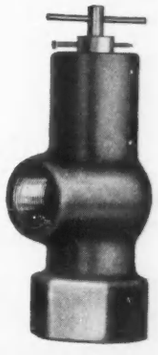
Company, Well and Location	Int. Prod. Bbls.	Depth
Allegany County—		
J. A. Wilber, Northrup farm, Bolivar	5	1332
LaMont Oil Co., Pierce farm, Wirt	3	1310
Forest Oil Co., Ackerman farm, Bolivar	8	1380
Ackerman Farm, Bolivar	7	1360
Ackerman Farm, Bolivar	10	1355
Ackerman Farm, Bolivar	9	1340
Ackerman Farm, Bolivar	12	1350
Ackerman Farm, Bolivar	7	1355
J. H. Reynolds, Sage farm, Bolivar	5	1250
Ebenezer Oil Co., Hochsteter farm, Scio	9	1230
Cretekos & Vossler Oil Co., Norton farm, Scio	6	1220
M. W. Reynolds, Holtum farm, Scio	8	1230
Porge Oil Co., Anderson farm, Alma	8	1300
Messer Oil Corp., White farm, Alma	10	1390
White farm, Alma	12	1375
Knoxville Oil & Gas Co., Williams farm, Alma	6	1400
Williams farm, Alma	8	1390

[*Continued on next page*]



Above: 2" high pressure type for slush pumps.

Right: 2" low pressure type for hydraulic service up to 1,000 pounds per square inch.



The Symbol of Safety in

OIL FIELDS EVERYWHERE

The one sure way of knowing that your pump is safe from the hazards of excess pressure is to provide that pump with SHEAR-RELIEF Valve protection. This valve relieves pressure at a set point by shearing a common nail. The valve name-plate lists the shear stress of each nail size, and includes a nail gauge to prevent mistaking sizes. The sheared nail is the extent of your damage when the valve opens.

FLUID-PISTON SLUSH PUMPS
ABERCROMBIE PUMP CO.
GULF BLDG. HOUSTON TEX.

SHEAR-RELIEF VALVE

Company, Well, and Location	Int. Prod. Bbls.	Depth
Andrews Bros. Oil Co., Minnum farm, Alma	7	1410
Wm. Taylor Est., Thornton farm, Scio	10	1325
Marsh Oil Co., Withey farm, Bolivar	6	1350
McEbenwood Oil Co. Dougherty farm, Andover	6	1250
Dean farm, Andover	5	1255
Dougherty farm, Andover	4	1258
Messer Oil Corp., Dunning farm, Genesee	5	1375
Dunning farm, Genesee	1	1360
Dunning farm, Genesee	½	1364
Swan Oil Co., Colegrove farm, Genesee	2	1355
Sloan & Zook, McDivitt farm, Bolivar	2	1360
Phillips farm, Bolivar	1	1340
Phillips farm, Bolivar	1	1350
Bradford Prod. Corp., Willets farm, Genesee	10	1390
Willets farm, Genesee	10	1400
Willets farm, Genesee	10	1395
Willets farm, Genesee	10	1389
NEW YORK: Water (Pressure) Wells		
Allegany County—		
Sawyer & Martin, Wasson farm, Bolivar	..	1410
New York Oil Co., Brown farm, Bolivar	..	1425
Brown farm, Bolivar	..	1439
LaMont Oil Co., Pierce farm, Wirt	..	1320
Forest Oil Co., Ackerman farm, Bolivar	..	1360
Ackerman farm, Bolivar	..	1350
N. V. V. Franchot, Reddy farm, Alma	..	1400
Reddy farm, Alma	..	1415
Messer Oil Corp., White farm, Alma	..	1350
White farm, Alma	..	1345
Cris Oil Co., C. W. Vossler farm, Alma	..	1460
L. E. Norton Est., Coats farm, Scio	..	1240
Coats farm, Scio	..	1235
Bradley Prod. Corp., Sawyer farm, Bolivar	..	1340
Sawyer farm, Bolivar	..	1345
Sawyer farm, Bolivar	..	1350
Sawyer farm, Bolivar	..	1360
Sawyer farm, Bolivar	..	1355
Homestead Oil Co., Homestead farm, Bolivar	..	1345
Messer Oil Corp., Dunning farm, Genesee	..	1360
Jacob Trinkle Est., Hill farm, Genesee	..	1350
Bradley Prod. Corp., Coon farm, Genesee	..	1325
Coon farm, Genesee	..	1330
Bradford Prod. Corp., Willets farm, Genesee	..	1370
Willets farm, Genesee	..	1365

MOUNTAIN STATES Completions

COLORADO

Company, Well and Location	Init. Prod. Bbls.	Depth
Cheyenne County (Kit Carson Structure)—		
Gulf Oil Corporation, Union Pacific-Larsen 1, cse nw 13-13s-49w	*	6360

MONTANA

Toole County (Kevin-Sunburst Field)—		
A. E. Crumley, Gunderson 12, cnw se 24-35n-3w	110	1600
Big West Oil Co., Gunderson 8, cnl ne nw 19-35n-2w	25	1595

WYOMING

Converse County (Shawnee Field)—		
New Era Fuel Corporation, Boot Cattle Co. 2, 1-31n-70w	¶1	248
Fremont County (Beaver Creek Field)—		
Stanolind Oil & Gas, Johnson 1, cse se 3-33n-96w	¶9	8920
Niobrara County (Lance Creek Field)—		
Continental Oil Co., Tom Bell 11, sw sw 27-36n-65w	746	5417
Tom Bell 12, se se 33-36n-65w	712	4004
A. B. Cobb, Novick-Ong 3, sw se sw 6-35n-65w	1640	5349
Mackinnie Oil & Drilling Co., Thompson 3, nw ne nw 7-35n-65w	1008	5310
Ohio Oil Co., Carrie Putnam 10, csw se nw 4-35n-65w	1092	5473
Sweetwater County (North Baxter Basin Field)—		
Selegna Oil Corporation, Union Pacific 1, csw sw 11-20n-104w	*	4966

*Failures; †Junked; ¶Million cu. ft. gas.

Rocky Mountain Fields

Second well extends West Shawnee Creek mile east.

New light oil field found 13 miles north of Casper.

Morrison formation yields gas at Beaver Creek.

Casper.—Second commercial shallow oil well was this week brought in 18 miles east of Douglas, Wyo., in the West Shawnee Creek area, Converse County. New Era Fuel Corporation's Mary Gaspar 2, NW SW 25-32n-69w, drilled 15 feet of saturated oil sand, carrying no water, from 655-670 feet, and operators have stopped to rig up pumping equipment for a completion. Hole is standing full of oil and operators were unable to bail down the fluid level. The well is estimated for 50 barrels daily.

The new well is located a mile east of the discovery Jennie Evert 1, which pumped 25 barrels of light oil initial from shallow depth. Completion of the Gasper 2 for commercial production it is expected will stimulate a considerably greater shallow drilling campaign at Shawnee.

New Field Near Casper

General Petroleum Corporation's Government 1, C NW SE 2-35n-77w, 13 miles north of Casper, principal Rocky Mountain refining center, apparently has opened up a new light oil reserve for central Wyoming. The test is rigging up heavy pumping equipment to agitate production in an attempt to bring the well in for a flowing producer. The well swabbed at the rate of around 600 barrels daily while cleaning out from the Lakota sand with top at 7974 feet and bottom at 8013 feet. Depth is 8020 feet with hole bottoming seven feet in the Morrison formation.

Oil is a mixed parrafin and asphalt base with gravity of 32.7 degrees. It has less than one-tenth of one percent sulphur content and is particularly adapted to its parent company's (Soconv-Vacuum) White Eagle division refinery at Casper, which for the past six years has been specializing in the manufacture of cutback asphalts. The refinery is 10 miles by pipe line route from Cole Creek. Analysis of the Lakota oil at Cole Creek shows gasoline naphtha content, 21.4%; kerosene, 15.6%; gas oil, 10.1%; medium lubricating distillate, 3.8%; non-viscous lubricating distillate, 12.3%; residuum, 34.7%; loss 2.1%.

Company contemplates on completion of Government 1 of starting one and possibly two more tests. The G-P may move in a heavier rotary rig and drill a test to the Sundance sand expected at 600 feet lower than the Lakota at Cole Creek. The lighter rig would be used for testing upper sands particularly the Wall Creek series where excellent oil cores were recovered and an inconclusive test was made in the Lakota discovery hole.

Stanolind Oil & Gas Company brought in a new gas field for Wyoming at Beaver Creek in the completion of its Johnson 1, C SE SE 3-33n-96w, Fremont County, for 9,000,000 cubic feet daily. Production was obtained in the Morrison formation with 8⅝-inch casing perforated at 8230-85 feet. Hole bottoms at 8922 feet in the Sundance sand which carried water and was plugged back to the Morrison.

An interesting well near completion is Sinclair-Wyoming Oil Company's Muskrat 2-C, NW NW NE 4-32n-92w, Muskrat field, Fremont County. The control head has been installed and company is gun perforating the casing for a test of the Lakota formation. Hole bottoms at 5320 feet in the sand with casing set one foot off bottom.

In the Allen Lake gas field, Carbon County, Ohio Oil Company's A. J. Hazlet Estate 3, C NW SE NW 34-23n-79w, is nearing critical stage approaching the heretofore untested Tensleep formation, drilling at 3313 feet and preparing to make an electrical survey of formations.

Ohio Oil Company and California Company's State-Griffin 3, C SW NW 36-21n-79w, is drilling at 5468 feet with first objective, the Sundance horizons expected within the next 125 feet of hole. The well is a south extension test to the field, and is scheduled to go to the untested Tensleep at Big Medicine Bow Dome.

Lance Creek

J. E. Manning's Elsie Pecklow 1, SE SE SE 1-35n-66w, west extension test to the Leo pool in the Lance Creek field apparently is a disappointment. The well showed 35 barrels of fluid, of which about 20 barrels was water through the drill stem in an hour and 15 minutes. The drill stem was seated at 5635 feet and total depth 5677 feet in the Leo sand.

C. L. Price is drilling below 2700 feet in his Lamb 4, C SE SW 12-35n-66w, another west extension test located 2 miles from his Lamb 1, outpost Leo well at Lance Creek.

A southeast extension to Lance Creek, J. M. Huber Corporation's H. & M. 1, NW NE NE 8-35n-65w, is coring ahead at 4000 feet and is scheduled to drill the Leo sand.

Continental's Apex 4-OPC-2, C NW NE SE 34-36n-65w, in the eastern sector of the field, is coring at 3950 feet, feeling ahead for the Sundance sand.

In Daggett County, northeastern Utah, Mountain Fuel Supply Company's R. D. Murphy 3, NW NW SW 23-3s-24e, Clay Basin structure, is running 7-inch production casing for a test of the Dakota sand with hole bottomed at 6035 feet.

Michigan Fields

Deep Monroe lime wildcat output helped by acid.

Bentley northeast extension test to be acidized.

Deep Monroe lime wildcat output helped by acid

Mt. Pleasant, Mich.—Treated with 1000 gallons of acid June 11, Norton & Kramer, trustee's Sharp 1, first deep Monroe lime producer in Michigan, flowed 105 barrels of oil, net, in 5 hours, and by swab and flow recovered 210 barrels in 32 hours.

Operators reported 43 barrels recovery third day on a 7-hour pump test, and estimated daily production between 60 and 75 barrels, settled, following treatment.

Before using acid over a three weeks' test, the wildcat averaged between 35 and 42 barrels daily on the pump from 3422 feet, where it was bottomed in Monroe limestone.

A New Zone

Sharp 1, NW NW NW, Section 30-14n-8e, Akron Township, Tuscola County, currently is the most interesting wildcat development in Michigan, due to the fact that it is producing from a heretofore commercially unproductive lime zone. Sharp 1 had the Dundee at 2585 feet, Monroe top at 2929 feet and drilled out three saturation zones in the Monroe before reaching its present producing depth.

Operators believe that establishing definite commercial production in the Monroe on the Tuscola test will be an important factor in encouraging additional deep tests for this zone.

Acid treatment was slated this week for Ralph LaBlanc's Snellenberger 1, SW SE SW, Section 16-17n-2e, Bentley Township, Gladwin County, a ¾-mile northeast extension well to the Bentley field. It showed for an estimated 12 to 20-barrel pumper natural in Dundee at 3559 feet.

Oil locomotive makes record length trip

A new oil-burning steam locomotive on the Santa Fe line recently made the 2227-mile run from Los Angeles to Chicago, a trip that usually requires four changes in locomotives. The oil was changed at Chicago, and with a little de-squeaking and bolt-tightening No. 3461 was ready to start back west over the steepest railroad grades in the country at an average speed of 45 miles an hour.

Fast, cheap, comfortable rail travel, without annoying delays, appears to be coming with the oil-burning "Iron Horses," which are beginning to rival the diesel-electric streamliners. Railroad men are divided in their loyalty, earnestly arguing the merits of each.

Modern railroad fuels are blended from recirculating oils and cracking still residue to give higher heat per gallon; lubricants are processed oils which function throughout a temperature range as great as 100 degrees in a single run. More than 55,000,000 barrels of oil are used yearly by the railroads, 85 percent of it as fuel for more than 6000 oil-burning and diesel-electric locomotives already in use.

More than twice as much oil has been produced in the United States than was reported to be available in 1915.

MICHIGAN
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Allegan County—		
Gordon Oil, Jamestown 1, sw nw se 17-4n-12w	*	1933
Eureka Dev., Widenfeller 3, sw nw sw, 29-4n-12w	300	1677
Columbia Oil, Richter 2, se ne se 30-4n-12w	408	1631
Swanson Oil, Ruckinski 1, se ne nw 30-4n-12w	35	1690
H. H. Heinig, Bowser 1, sw ne ne 8-3n-13w	*	1710
J. W. McIntosh, Dalrymple 2, nw nw nw 16-3n-13w	200	1650
Haynes Oil, Harrigan 1, nw ne 29-1n-13w	35	1380
Arenac County—		
Swanson Oil, Metzger 1, se ne se 5-20n-4e	200	2459
Gladwin County—		
American Drilling, Soldan 8, se nw se 12-18n-1w	256	3626
J. V. Wicklund, State J-3, ne se ne 13-18n-1w	*	3692
Midland County—		
Mammoth, Caplan 1, sw nw nw 26-16n-1w	312	3784
Gordon Oil, Verity 2, ne sw nw 26-16n-1w	416	3790
Turner Pet., Verity 1, sw sw nw 26-16n-1w	200	3787
Sun, State B-5, ne nw se 27-16n-1w	484	3789
State A-2, ne nw nw 2-15n-1w..	*	3305
Franklin Pet., Sias 1, nw nw sw 32-15n-2e	*	3829
Monroe County—		
R. D. Olmsted, Frink 1, sw se ne 25-5s-6e	*	2600
Saginaw County—		
Roy Hogan, Inc., Lake Sugar Co. 1, ne ne ne 11-11n-1e	*	3193

*Failures; †Junked; ¶Million cu. ft. gas.

A TIGHTER SEAL WITH LESS FRICTION?
SEA RINGS are completely automatic. The flexible lip is held tightly to the rod by the pressure on the work stroke, but releases on the return. Unnecessary friction is eliminated, there is less wear on both rod and packing.
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SEA RINGS
INCREASED operating efficiency and less time lost for repacking . . . that is the record J-M Sea Rings have made in plants throughout the country. Three features explain their exceptional service—proper composition, correct design and rugged construction. And these same three features are characteristic of all packings in the complete J-M line.
Johns-Manville, largest manufacturer of asbestos products, is well equipped to make packings of unusual quality. J-M Packings are the result of 60 years' research and experience in the development of materials specifically suited to various mechanical equipment and service conditions. No matter what your packing problem is, there is a J-M Packing that can handle it efficiently, dependably and economically.
The J-M Packings Catalog will help you select the right packing for every requirement in your plant. For your copy, write Johns-Manville, 22 E. 40th St., N. Y. C.
JM JOHNS-MANVILLE PACKINGS & GASKETS
AVAILABLE ON PHONE CALL AT YOUR NEAREST DISTRIBUTOR

IMPORTANT WILDCAT TESTS

ALABAMA

Barbour—H. A. Stebbinger's Town of Lewis 1, sw se 11-9n-25e, lcn. **Choctaw**—Joe Modisett et al's McCorvey 1, se sw sw 20-9n-2w, sd 7520 ft. **Greene**—R. T. Jeffrey et al's R. C. Lett 1, 3-20n-2e, spd dr 700 ft (120 ft e Willis & Payne's test). **Mobile**—J. C. Prine's King 2, 1120 ft s and 700 w nec 4-1n-4w, elev 134 ft, sd 1160 ft shale. Grand Bayou O&G Co.'s J. A. Stafford 1, sw sw 24-7s-3w, ru and sd.

ARKANSAS

Clay—Canadian American Oil Co.'s Smith 1, c ne nw 9-20-8, elev 375 ft, top Nacatosh 800 ft, sd 1005 ft shale. **Columbia**—J. A. Longino's Baker 1, se nw nw 13-17-20, mim.

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Suitable for heavy trucking, tractor and rotary work.

Sturdiness is provided by cross-bolt supports on both ends of block—thus preventing block from spreading under load. Equipped with either high speed bronze bushings or Hyatt Roller Bearings. Alemite lubricated. Steel swivel hook or closed clevis interchangeable. Patented swivel hook permits insertion of line without removing hook from block. Sheaves 6", 8" and 10" in diameter—single, double or triple and grooved for 1½" manila rope or any size wire line; with 2" diameter sheave pin.

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Manufacturers of

Patented Oil Country Equipment

DAWSON ROAD — TULSA, OKLA.

E. O. Olds' Mary Dennis 1, nw se sw 4-17-21, owdd, td 4513 ft. G. H. Vaughn & Shell's Garrett 1, c ne se 12-17-20, lcn. Standard of La.'s Tina Crumpler 1, c sw nw 15-17-19, woc surf csg 226 ft. Fohs Oil Co.'s Phillips 1, nw nw sw 15-17-19, spd. **Hempstead**—Easton, May & Murdock's R. M. LaGrone 1, ne ne 5-12-26, sd 3350 ft (Travis Peak). **Johnson**—Ark. La. Gas Co.'s Hudson 2, se nw 14-10-24, mim. **La Fayette**—Standard of La.'s McKean 2, nw sw 8-16-22, base anhydrite 3406 ft, base James lime 3968 ft, setting 7-in csg 7196 ft, td 7257 ft. **Lonoke**—J. W. Eddington et al's Anderson 1, nw ne 7-4-9, 12-in csg 85 ft, no report. Cabot Drlg. Co.'s Benson 1, (Cabot townsite lcn), trying kill water flow, td 1463 ft. **Miller**—F. F. Earles' General American 1, se sw 20-14-26, sd 1206 ft. **Union**—Joe Modisett et al's Frost Lbr. Co. 1, ne ne 8-18-12, spd.

CALIFORNIA

Los Angeles County: Castaic—Royal Land Corp.'s No. 1, 8-4n-17w, dr 705 ft. Shell's Dougherty 1, 9-4n-17w, dr 2081 ft. **La Mirada**—John McKeon & Assoc.'s Carmenita 1, 21-3-11, dr 3015 ft. **Lomita**—D & B Oil's No. 1, 30-4-13, testing 5275 ft. **Newhall**—Palmluck's No. 1, 23-3-16, rur. **Redondo**—Clifton Oil's No. 1, 17-4-14, testing 5262 ft. **San Fernando**—Tide Water's Porter 1, 27-3-16, rig. **Whittier**—Security Land & Water Co.'s No. 1, 8-2-11, dr 473 ft (formerly Geo. W. Langstaff et al's Iliff 1.)

Orange County: Anaheim—Shell's Weisel 1, 16-4-10, dr 5745 ft. **Costa Mesa**—A. V. Oil & Gas' No. 1, 16-6-10, dr 2075 ft. **Kraemer**—Congress' Kraemer 1, 36-3-9, dr 3014 ft.

San Bernardino County: Chino—Southern Counties Pet.'s Los Serranos 1, 22-2-8, rur. **Fresno County: Coalinga**—Petroleum Securities' Gatchell 2, 18-20-16, preparing to resume. Magnet's Fearon 2, 18-20-15, dr 1091 ft. United Universal's Leavitt-Hintze 1, 12-20-15, foundation. J. F. Wilcox's No. 6, 11-20-14, rigging pump. **East Coalinga**—Pure's S. P. L. Co. 1, 31-18-17, redr 9132 ft. **Jacalitos Hills**—Dauphin's Boone 1, 30-21-14, testing 2536 ft. Dauphin's Boone 2, 19-21-14, foundation.

Kern County: Arvin—Petrex's Petrex 1, 32-31-30, dr 4859 ft. Union's Berry 1, 15-31-29, swabbing mud, water and oil. **Belridge**—F. E. Abbott's No. 1, 18-27-19, rig. General Pet.'s St. Helens 1, 12-28-20, pumping to sump so and water. **Buena Vista Lake**—Ohio's KCL A-8, 32-31-26, dr 10,859 ft. **Devils Den**—Amerada's Beer 5, 22-26-19, redr 7166 ft. Gibson's Alferitz 3, 14-25-18, r 512 ft. **Dominion**—Geo. W. Dean's Dean 1, 26-26-28, dr 863 ft. Master Pet.'s Recovery 3, 33-26-28, pumping estimated 65 b/d, 75 percent cut. **Edison**—Ray W. Steven's No. 1, 22-30-30, dr 154 ft. Geo. W. Johnston's Brown-Paullette 1, 33-29-30, dr 1128 ft. **Fruitvale**—The Texas Co.'s Camp-West-Lowe 1, 7-29-27, dr 3620 ft. **Grapevine-Wheeler Ridge**—The Petrol Corp.'s Reserve Petrol 33-5, 33-11-19, dr 3309 ft. Richfield's KCL 1, 28-11-20, dr 3590 ft. Wilshires' Tejon 1, 34-11-19, lcn **Lamont**—Rollo Brinkman's Sexton 1, 11-31-28, grade. **Lerdo**—Standard's KCL 18-1, 29-28-26, dr 8684 ft. **McFarland**—Tide Water's Pond 1, 17-26-25, dr 1763 ft. Shell's KCL 83-35, 35-26-25, dr 6868 ft. C. C. White's No. 1, 9-26-26, dr 2029 ft. **McVan**—Desert Glow's No. 3, 14-27-27, rig. **Poso Creek**—Harkness & Laws' Hunt 1, 27-28-27, foundation. **Richgrove**—Dilamar's Quinn 1, 15-25-27, wocs 2834 ft. Dilamar's Quinn 3, 15-25-27 rig. **San Emigdio**—Shell's KCL 1-A4, 26-11-22, r 9727 ft. **Strand**—Continental's KCL E-1, 17-30-26, co 8262 ft, swabbed water 8242-8245 ft, to perforate higher. **Temblor Hills**—Chico Martinez' Holly 1, 1-29-20, bailing mud, water and oil 1020 ft. **Wasco-Semitropic**—Continental's KCL A-3-8, 8-27-24, dr 1942 ft. Continental's Seaboard-Assoc-KCL C-1, 26-27-24, dr 10,914 ft. Standard's Mushrush 1, 7-27-24, rur. Standard's KCL 8-B-1, 17-27-24, dr 4698 ft.

Kings County: Dudley Ridge—Falcon's Josephine 2, 24-23-20, dr 6023 ft.

Tulare County: Alpaugh—Sullivan & Youngdahl's No. 1, 33-23-23, preparing to deepen 2732 ft (formerly E. P. Jennings' No. 1). **Trico**—Caminol's A. O. G. 3, 29-24-24, rur to deepen 7555 ft.

Santa Barbara County: Carpinteria—Carpinteria's No. 1, 32-4-25, dr 2375 ft. **Carreaga**—Douglas-Stratton's No. 1, 8-8-33, dr 5338 ft. **Casmalia-Cat Canyon**—Standard's Los Flores L & O Co. 1, 27-9-33, standing plugged 5205 ft. Southern Calif.'s Houk 1, 9-9-33, sd 5002 ft. **Coal Oil Point**—South Crude's Permit 191-2, 24-4-29, redr 3025 ft. **Gaviota**—Gaviota's Hollister 1, 35-5n-33w, bailing water 3215 ft. Wilshire's Hollister 1, 35-5-33, dr 4310 ft. **Gato Ridge**—Barnsdall's Magenheimer 5, 9-8-32, grade. Barnsdall's Tognazzini 3, 9-8-32, dr 1538 ft. O. C. Field Gas' Continental 3, 9-8-32, rig. **Lompoc**—J. E. O'Donnell's Helen 1, 8-7-33, dr 3440 ft. **Los Olivos**—Continental's La Laguna 1, 24-8-31, dr 2321 ft. United Western's Bradley 1, 15-7-30, dr 3260 ft. **Orcutt**—Bankline's Silva 1, 7-9-33, dr 5560 ft. Warren Deuel's Garrett 1, 12-9-34, rig.

San Luis Obispo County: Elkhorn—Western Plains' Bell 1, 7-31-21, sd 4010 ft. Western Plains' Bell 2, 2-32-21, dr 2670 ft. **Edna**—Loma Grande's Luis 1, 28-31-13, rig. **Huasna**—Hancock's Scherer-Dickes 1, 30-12-33, preparing to resume.

Ventura County: Moorpark—Darby's A. B. Cohn 1, 7-2-19, dr 997 ft. **Oxnard**—Walter G. Rowe's L. Johnson 1, 15-1-22, fsg 4705 ft. **Ojai**—High Mesa's Butcher 1, 16-4-22, dr 1690 ft. Holly Development's Macrate 1, 27-4-23, rig. St. Louis's Pirie 1, 18-4-22, pumping 20 b/d, 19.2 gravity, 65 percent cut, 2710 ft. **Sespe**—Condor's Dorman 1, 6-4-19, pumping 65 b/d 26.4 gravity, 1.0 percent cut. Claran's Hardison 1, 22-4-20, sd 410 ft. Garmack's Crosby 1, 14-4-19, grade. La Salle & Van Dissen's No. 1, 17-5-19, grade. H. A. McDonald & Eric Craig's No. 1, 5-5-19, lcn. Merchants Pet.'s Cochrane 8, 1-4-20, dr 621 ft. **Simi**—Garmanina Truccano's No. 1, 5-2-17, abd 1005 ft. **South Mountain**—Albatross Oil Co.'s Scheiferle 1, 17-3-20, rig (formerly Clipper Oil Co.'s). Clipper Oil's Calco 1, 17-3-20, foundation. The Texas Co.'s Yale Richardson 5, 13-3-21, dr 5417 ft. **Tar Creek**—Section 20 Oil's No. 1, 20-5n-19w, co 1611 ft. **Timber Canyon**—J. W. Martin's Arnett 1, 15-4-21, dr 1479 ft.

ABBREVIATIONS

The following abbreviations, signs, etc., are used in completions and wildcat reports in THE OIL WEEKLY.

*—*dry hole abandoned well.*	owdd—*old well drilling deeper.*
‡—*salt water (completions).*	owpb—*old well plugging back.*
†—*junked and abandoned.*	pb—*plugged back or plugging back.*
¶—*million feet of gas.*	r—*reaming.*
abd—*abandoned.*	rog—*rig on the ground.*
bbls.—*barrels.*	rur—*rigging up rotary tools.*
br—*building rig.*	rust—*rigging up standard tools.*
bs—*basic sediment.*	sd—*shut down.*
csg—*casing.*	sdtr—*sidetracking.*
co—*cleaning out.*	sg—*show gas.*
dd—*drilling deeper.*	si—*shut in.*
dk—*derrick.*	so—*show oil.*
dr—*drilling.*	so&g—*show oil and gas.*
fsg—*fishing.*	spd—*spudding.*
ft—*feet.*	sr—*straight reaming.*
hfw—*hole full of water.*	sw—*salt water.*
in—*inches.*	td—*total depth.*
lcn—*location.*	ur—*underreaming.*
m—*milling.*	wih—*water in the hole.*
mim—*moving in materials.*	wo—*workover.*
mit—*moving in tools.*	wocs—*waiting on cement to set.*
mot—*milling on tools.*	wosr—*waiting on standard rig.*
n, s, e, w—*north, south, east, west.*	
oih—*oil in hole.*	

FLORIDA

Levy—Fla. Oil Discovery Co.'s Sholts 2, sw sw ne 9-15s-13e, arr core, arr deepen, td 3010 ft shale. **Nassau**—St. Mary's River Oil Corp.'s Hilliard Turpentine Co. 1, nw nw se 19-4n-24e, elev 110 ft, 6⅝ in csg 3935 ft, dr 4324 ft shale. **Polk**—Edw. A. Hill's Polk County Lbr. Co. 1, nw nw ne 32-25s-25e, dk. **Suwannee**—Wm. G. Blanchard's Lucy Cotton 1, se ne 35-3s-11e, elev 70 ft, sd for heavier rig, 200 ft. J. W. Phillips Oil Explorations' Shilkett 1, nw nw 14-4s-14e, dk.

ILLINOIS

Bond—Farrely's Kyle 1, sw nw nw 28-5n-4w, mim. Huppard et al's Dresser 1, sw ne nw 21-6n-4w, sd 1095 ft. Elmor's Dilman 1, s½ se sw sw 13-6n-2w, rig. Whitehead et al's Pollan 1, nw se sw 26-6n-2w, sd 3300 ft. **Clark**—Watkins et al's Wright 1, nwc se 24-1n-3w, sd 100 ft. **Clay**—Gordon et al's Cannon 1, c nw se se 32-3n-5e, dr 200 ft. Kingwood's Graham 1, c sm sw nw 13-3n-6e, swb 173 bbls 22 hrs, to re-acidize, td 2984½ ft. Eureka Oil's Siebens 1, nw sw ne 35-3n-8e, top St. Genevieve 2919 ft, cored to 2996 ft, no show. Carter's Cox 1, c se se sw 14-4n-5e, testing td 4325 ft. Ohio's Negley 1, c wp nw sw 24-4n-8e, abd 3150 ft. **Christian**—Independent's Warren 1, swc 23-11n-1e, dr 1595 ft. **Clinton**—Schlofly's Brinkman 1, nec nw 31-1n-2w, dr 150 ft.

Heldt's Lampin 1, sw se nw 16-1n-2w, sd 1238 ft. Ray et al's Schnitzmeyer 1, el ne ne se 6-1n-1w, abd 1500 ft. Phelps' Dodillet 1, se nw sw 25-1n-1w, dr 470 ft. Brookside's Nothaus 1, nec 23-2n-2w, spd and sd. Wilson et al's Goesling 1, c w-m nw se 35-2n-2w, fsg 850 ft. Fagerburg et al's Quinn 1, se ne nw 27-2n-1w, spd. **Crawford**—Hastings et al's Athey 1, c n- ne ne 18-8n-12w, dr 1500 ft. **Dewar**—Leach Bros.' Lee 1, sw ne se 11-1s-10e, sd 3270 ft. **Effingham**—Kingwood et al's McWhorter 1, ep se nw 15-6n-6e, dr 5470 ft. Penn-Illinois' Niehoff 1, nw ne nw 24-8n-4e, rur. **Fayette**—Jarvis et al's Yakey 1, se nw se 6-7n-3e, circ 1520 ft. Iriquois' Wills 1, nw se se 6-8w-3e, rur. **Gallitin**—Siegel et al's Choisser 1, ne nw sw 5-8s-9e, ru & sd. **Lawrence**—Payne et al's Emerson 1, nw nw sw se 20-4n-11w, set csg td 967 ft. Kesl et al's Warner 1, c ne ne 23-4n-11w, spd. **Madison**—Kennedy et al's Eisenmeier 1, nec se 5-2n-5w, sd 1355 ft. **Marion**—Sowers et al's Lancaster 1, se nw nw 16-1n-1e, tst td 1668 ft. Texas' Tate 1, c w½ s½ nw nw 5-1n-2e, sd 235 ft. R. E. Dalton's Clifton 1, ne sw sw 15-4n-4e, dr 2400 ft. Dalton Oil Co.'s Wesner 1, swc nw 24-2n-1e, spd and sd. Siegel's Roddy 1, sec sw 20-2n-3e, sd 2207 ft. Adams' Hawkins 1, c sw ne 7-3n-1e, dr 1010 ft. Marion Oil's Wilson 1, nec se 18-3n-3e, rng 5-in csg, td 1898 ft. **Massac**—Kahle et al's Harvick 1, swc 23-14s-3e, sd repairs td 2875 ft. **Monroe**—Sloan et al's Puntney 1, swc nw 23-2s-9e, lcn abd. **Montgomery**—Hammer et al's Jones 1, c nw 22-7n-3w, sd 285 ft. Myers et al's Klekamp 1, swc se 29-8n-5w, sd 885 ft. **Richland**—Shamrock's Alvord 1, c sw se ne 33-3n-9e, cellar. **St. Clair**—Hanks et al's Collins 1, c ne ne se 24-1s-9e, dk. **Saline**—Bolton et al's Wesley 1, swc nw 12-8s-6e, sd 320 ft. C. F. Bolton's Beagle 1, nwc ne 13-9s-7e, cmt & sd, td 2601 ft. Rogers et al's Saylor 1, sec 3-10s-6e, sd 1502 ft. Whitlock et al's Anthis 1, nwc ne 12-11s-5e, sd 1730 ft. **Selby**—Borch's Patten 1, c ne ne nw 25-11n-2e, dr 945 ft. Milan et al's Kull 1, sec 4-11n-3e, lcn. **Washington**—Salvage Oil's Reinkensmeyer 1, sec nw 11-1s-2w, dr 110 ft. Parshall et al's Harmon 1, se sw sw 22-1s-1w, abd 1925 ft. Gulf's Wilson 1, c ep ne ne 30-1s-5e, ream 2967 ft. Kingwood's Webb 1, c ep sw ne 4-2s-2e, woc td 94 ft. Bitteman's Bonk 1, c se ne sw 16-3s-2w, lcn. Nowlem et al's Kelley 1, ne nw ne 25-4s-2e, ream, td 2916 ft. **Wayne**—Pure's Byars 1, c sp se se 34-1n-7e, tst td 3300 ft. Bruner's Kuyoth 1, nwc 30-2n-8e, show 3005-6, co. Wicklund's McCauley 1-B, ne sw nw 7-2n-9e, mim. **White**—Hunt et al's Smith 1, nw se sw 11-5s-8e, mir td 100 ft. Palmer's Xiegler 1, sw nw se 3-5s-9e, dr 910 ft. Mazda Oil's Meade 1, nec 26-5s-9e, abd 3210 ft. **Williamson**—Geo. Synd's Scott 1, sw se sw 4-10s-2e, rng 8-in csg td 670 ft.

KANSAS

Barton—Sinclair Prairie's Frederick 1, swc se 16-16-11w, swb 110 bbls oil and 320 oil 9 hrs, td 3336 ft. Price et al's Wondra 1, nwc ne 10-17-12w, potential 539 bbls, td 3343 ft. Amer et al's Seyfert 1, nw sw ne 3-17-13w, dr 3000 ft. Colonial's Lust 1, nw ne 19-17-13w, rig. Crown's Wolfe 1, se sw se 36-19-12w, set 10-in 2125 ft, td 2243 ft. Silverstine's Otte 1, se nw 2-19-14w, ru. Kessler et al's Dirks 1, nw ne 14-20-16w, dr 650 ft. **Butler**—Duston's Miley 1, se nw ne 17-27-5e, sd 2008 ft. **Cowley**—Heilman et al's Sawyer 1, se ne ne 10-28-7e, dr 600 ft. Palmer's Houser 1, se nw sw 13-30-3e, sd 2930 ft. **Dickinson**—Franks et al's Huffman 1, nwc 11-13-13, sd 1175 ft. **Geary**—Midland's Gfeller 1, c nw 6-12-5e, lcn. **Ellis**—Cities Service's Hall 1-C, c el w½ ne 35-11-17w, ru. **Ellsworth**—Cities Service's Splitter 1, c wl se 20-17-9w, spd. Cities Service's Schroeder 3-A, 29-17-9w, 2800 ft oih, td 3232 ft. Cities Service's Pflogg 1-B, c nw 32-17-9w, 10-inch set 227 ft, woc. **Harper**—Hutchin O&G's Ketchen 1, sw se se 11-35-5e, dr 2350 ft. **Jackson**—Haverback's Marble 1, c ne ne 26-9-14e, rng 6-in to 2235 ft. **Lane**—Phillips' Kees 1, c se se 3-19-30w, cmt csg 2483 ft, td 4911 ft. **Marion**—Johnson et al's Miltz 1, ne sw sw 24-17-4e, co 1130 ft. **Ness**—Schoeppel et al's Moses 1, c sw nw 10-18-25w, swb 5 bbls per hr, acidized 1000 gals, td 4353 ft. Jones et al's Page 1, se nw 36-18-26w, sd 3270 ft. Mid-Continent's Collins 1, nwc 24-20-26w, lcn. **Ottawa**—Babcock Oil's Copeman 1, nwc 18-10-2w, dr 200 ft. **Pratt**—Tide Water's Jarboe 1, c nl se 25-26-14w, dr 3680 ft. **Reno**—Douglas et al's Durand 1, 3-23-5w, sd 3073 ft. **Rice**—Holland's Reese 1-A, nwc 5-19-9w, cellar. Cities Service's Gibson 1, sw se ne 10-18-8w, mit. Marlyn Oil's Vincent 1, nw ne 5-21-10w, dr 3060 ft. Boone et al's Schilling 1, nw ne 20-21-12w, cellar. **Riley**—Coronado Oil et al's Parks 1, sec 16-10-8e, sd 890 ft. **Rooks**—F. O. Haun's Gravenhorst 1, sec 7-6-16w, mit. Producers et al's Ham 1, sw nw 25-7-19w, ur td 1410 ft. Graham et al's Fike 1, swc 9-9-17w, dr 3475 ft. Hall's Kruse 1, se ne 3-10-16w, dr 570 ft. Elwell et al's Vair 1, se sw 34-10-19w, lcn. **Russell**—Phillips' Miller 1, c nw sw 29-13-14w, dr 2890 ft. Shields' Anshutz 1, sw se 2-14-13w, dr 3115 ft. Coralena's Hefferman 1, sec sw 34-14-13w, ru. Aylward's Solback 1, se ne 31-14-14w, sd 100 ft. El Dorado Ref.'s Rubb 1, nw ne 1-15-13w, dr 2375 ft. R. H. Shields' Rogg 1, c e l w½ nw, mit. Hall's Landon 1, sw se 11-15-14w, 1500 ft oih, td 3100 ft. Web-Son's Baxter 1, nw se 4-15-15w, dr 2600 ft. **Sedgwick**—Hudson et al's Fulton 1, ne se 35-28-1e, sd 2248 ft. Union's Howell swc 6-29-1e, dr 2900 ft. Crowe et al's Murphy 1, sw se 34-29-1w, rig. **Stafford**—Carlock's Richardson 1, se sw 10-25-11w, coring td 3825 ft. Austin's Slade 1, ne nw 35-25-12w, fsg 2835 ft. **Sumner**—Murphy et al's Tate 1, se nw 31-32-2e, sd 3515 ft. Hapenney et al's Evers 1, se ne 27-31-2e, woc 2030 ft. **Woodson**—Phil Han Oil's Evans 1, nw se 21-23-15e, 6-in set 1525 ft. Cleveland Oil's Fidelity 1, se ne 34-25-15e, show oil td 1435 ft. Cohen et al's Pendley 1, nw sw 5-26-15e, dr 1100 ft. McGinnis' Hill 1, c sw se 32-26-15e, spd.

NORTH LOUISIANA

Bienville—DeSoto O&G Co.'s Wm. Ashley 3, c nw se 15-16n-10w, rog. Mrs. B. A. Fleming 1, nw nw 18-16n-9w, mim. Gulf's Goodpine Oil Co. 1, se sw 25-14n-8w, elev 157 ft, massive anhydrite 5303-5420 ft, top lower Marine 9650 ft, dr 10,537 ft, gray shale, streaks gray sand. Producers O&G Co.'s Lockett 1, ne ne 9-15n-10w, 7-in csg 2940 ft, sw abn, td 5406 ft. **Bossier**—Lloyd & Sloan's B. A. Sherrill 1, se se 12-19n-12w, sd 785 ft. **Caddo**—R. E. Allison et al's Ellerbe et al 1, sw nw 27-18n-14w, 13⅜ in csg 229 ft, 9⅝ in csg 2048 ft, dr 4255 ft. Oils Inc.'s A. Cazaux 1, sw sw 16-16n-13w, rur (3500 ft test). **Caldwell**—Oakes et al's Kyles 1, sw ne 18-11n-3e, install heavier rig, td 470 ft. **Catahoula**—G. E. Foster et al's W. S. Peck 1, c s½ 39-10n-8e, sd 620 ft. **Claiborne**—E. T. Oakes et al's Kilgore 1, ne se 28-21n-5w, elev 288 ft 5¾ in csg 5290 ft, logged saturated lime 5297-5305 ft and 5307-12 ft, cleaned hole & acidized, testing sg and so, td 5313 ft. Union Prod. Co. et al's Brownfield 2, c se nw 5-19n-5w, elev 235 ft, 7-in csg 10,559 ft, pb to 10,500 ft, dr out cement, old td 10,661 ft. Weaver Oil Corp.'s Edmonds 2, sw ne 16-20n-5w, elev 209 ft, base massive anhydrite 4370 ft, top Travis Peak 5600 ft, logged so 5475-83 ft, ran electrical tester, sd 5852 ft. J. W. Buchanan's Miller Est. 1, se se 11-20n-8w, dk. **De Soto**—S. S. Alexander's Stell 1, ne ne 5-12n-16w, elev 245.6 ft, perf csg 5150-5440 ft, flowed est 50 to 60 bbls oil day, hung swab, recovered, testing, old td 6002 ft. The Hunter Co.'s Parker 1, se sw 26-12n-16w, elev 243 ft, logged saturated lime 5025-83 ft, perf 5-3/16-in csg 4950-5030 ft, gauged 4,250,000 ft wet gas, si, td 5184 ft. S. P. Taylor's Barnhart 1, ne se 20-14n-12w, mim. M. L. Stephens' M. E. Garrett 1, nw ne 10-11n-16w, mim. La. Seaboard's Lawrence 1, sw ne 36-12n-14w, elev 332 ft, tested so 2062 ft, tested dry 2822 ft, arr deepen. G. H. Collins et al's Joyner 1, sw ne 28-11n-12w, fsg 2005 ft. Fuqua & Gay's Frost 1, sw se 25-11n-15w, mim. **Franklin**—Southern Star Pet. Co.'s Grayson 3, sw ne 36-12n-6e, sd 1900 ft. **Grant**—C. L. Thompson et al's Woodward 1, ne sw 10-6n-3w, top Wilcox 2867 ft, sd 4527 ft sandy shale. C. R. Bowers et al's Harrison 1, ne sw 21-8n-5w, spd and sd. **Madison**—Continental Oil Co.'s Singer Mfg. Co. 1, n½ ne nw 3-15n-11e, rur. **Morehouse**—Hunter & Rowe's E. M. Clarke 1, sw ne 10-20n-7e, elev 103 ft, top lime 6218 ft, arr deepen, td 7022 ft. **Natchitoches**—Jos. E. Popkins' Peavy-Wilson 1, nw nw 36-7n-9w, ru and sd. W. T. Ryan et al's Lambert 1, nw nw 4-8n-9w, elev 140 ft, top Saratoga chalk 2323 ft, base Annona chalk 2643 ft, Austin chalk 3700-3890 ft, top Blossom 3189 ft, sd 4189 ft. Raines Bros.' Allen Plantation 1, ne sw 22-10n-9w, fsg 1250 ft. **Red River**—Glassell & Whitehurst's LeLong 1, ne nw ne 25-12n-11w, sd 3113 ft. **Sabine**—W. L. McClanahan et al's Frost-Johnson 1, se ne sw 22-9n-13w, elev 196.2 ft, top Nacatosh 1531 ft, top Saratoga chalk 1578 ft, Annona chalk 1816-2041 ft, installing blowout preventer, td 3027 ft. H. M. Sneed et al's Leone 1, nw se 8-7n-13w, rur. J. G. Sutton-Zwolle Oil Co.'s Bowman-Hicks 1, w½ sw se 14-7n-14w, lcn. Bowman-Hicks 2, w½ sw nw 24-7n-13w, lcn. Albert Reich et al's Glaque 1, ne se ne 27-7n-14w, 10-in csg 750 ft, dr 1130 ft. F. W. Martin & Co.'s Sabine 1, c w½ ne ne 23-7n-14w, 9⅝ in csg 2150 ft, arr run electrical tester and set csg, td 4258 ft; Sabine 2, c e½ ne ne 23-7n-14w, lcn. Lee Whitehurst et al's Bowman-Hicks 1, se se 14-7n-14w, top chalk 2105 ft, arr set 9⅝ in csg, td 2125 ft. A. Boykin King's Sabine 1, c nw nw 19-7n-13w, spd, dr 500 ft; Sabine 1-A, c w½ nw nw 19-7n-13w, lcn; Sabine 2, c sw nw 19-7n-13w, lcn. **Tensas**—H. B. Schuhmacher's Mounds Land Co. 4, irreg. section 39-11n-12e, top Cockfield 1025 ft, tested sw 1025-48 ft, sd 1765 ft. **Union**—Joe Modisett et al's Frost Lbr. Co. 1, ne sw 14-21n-1e, elev 188 ft, top lower Marine 6161 ft, top pink anhydrite 9060 ft, top Permian lime 9612 ft, cutting out hung drill stem, td 9637 ft. Standard of La.'s Frost Lbr. Co. 1, c sw sw 13-23n-2w, lcn **Webster**—Magnolia's Frank Sexton 1, c sw ne 32-23n-9w, elev 225 ft, top first anhydrite stringer 4175 ft, top massive anhydrite 4348 ft, top Travis Peak 5701 ft, 9⅝ in csg 6838 ft, top lower Marine 7605 ft, top Bodcaw (no show) 8032 ft, 7-in csg 9464 ft, perf 8990-9010 ft, completed as gas-distillate well, old td 10,462 ft. H. M. Branton 1, ne ne 6-22n-9w, lcn. Pardee Co. 1, ne nw ne 17-23n-11w, rur. W. M. Chambers' Thomas 1, se se 11-22n-11w, dk.

SOUTH LOUISIANA

Beauregard—Republic's Lutcher Moore 1, Bancroft, 10-6s-13w, shut in 8091 ft. **Calcasieu**—Sun's Lutcher Moore 1, nw of Starks, 1-8s-13w, dr shale 9126 ft. Union Sulphur's Drew Manual Training School 1, 4-10s-11w, dr shale 1820 ft. **Cameron**—Humble's Katherine Hanszen 2, Chalkley, 9-12s-6w, dr shale 7604 ft; same operator's Miami Corp. 1-B, Little Cheniere, 7-14s-6w, abn 10,895 ft. Pure's Calcasieu National Bank 1, n of Mallard Bay, 18-12s-4w, dr shale 419 ft. **Iberia**—Texas Co.'s State 4, Fausse Point, 35-11s-8e, testing at 9000 ft; same operator's Bayless and Jones 1, flank Jefferson Island, 58-12s-5e, comp 500 bbls daily, 8210 ft; same operator's Vermilion Bay 2-B, Vermilion Bay, 16s-5e, blowing dry gas at 9667 ft. **Jefferson**—J. Szodomaka's Carroll 1, n of New Orleans, 125-12s-11e, dr shale 4700 ft. **Jeff Davis**—Continental's Sturdivant 1, South Roanoke, 36-10s-4w, dr shale 9330 ft. **Lafourche**—Sun's Dibert, Stark and Brown 1, Chacahoula, 7-15s-15e, spudded. Texas Co.'s La Terre 1, Golden Meadows, 1-20s-21e, dr shale 3420 ft. **Orleans**—W. T. Burton's State 1, Lake Ponchartrain, 10s-13e, dk. **Plaquemines**—Gulf's Grand Prairie Levee District 1-A, Bird Island, 6-20s-19e, dr shale 4400 ft. **St. Bernard**—Gulf's State RR 3, Lake Borgne, 6-12s-15e, dr shale 9412 ft. **St. James**—Continental's Realty Operators 1, Convent, 17-12s-5e, woc 7013 ft; same operator's Colonial Sugar 1, 46-12s-5e, ru. **St. John The Baptist**—Shell's Godchaux Sugar 1, La Place, 97-11s-7e, building forms. **St. Martin**—Shell's Jeanerette Lbr. Co. 1, West Lake Verrett, 14-14s-12e, dr shale 9600 ft. Texas Co.'s St. Martin Land 11, Henderson, 21-8s-

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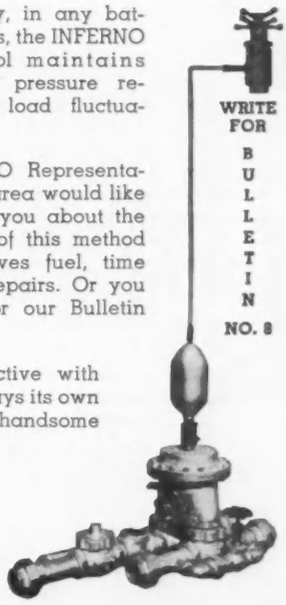

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7e, dr sand and lime at 6920 ft; same operator's State 6, Lake Mongouli, 10-10s-9e, piling. **St. Tammany**—O. B. Phillip's Blanche, 28-6s-10e, dr shale 2910 ft. **Terrebonne**—Barnsdall's Barrow 1, n of Bourg, 41-17s-18e, ru. Fohs' Buckley 1, Dulac, 77-19s-17e, testing 13,266 ft; same operator's State 1, La Terre area, 41-19s-19e, preparing to dr ahead at 12,508 ft. Shell's La Terre Land Co. 1, se of Houma, 73-18s-18e, dr shale 1275 ft; same operator's Realty Operators C-1, Minor, 10-18s-16e, dr sandy shale 6747 ft. **Vermilion**—Magnolia's Ferguson 1, West Gueydan area, 5-12s-2w, sd 9144 ft.

MICHIGAN

Allegan—R. L. O'Brien's Raber 1, 36-2n-13w, rig. J. W. McIntosh's Shanz 1, 14-1n-14w, dr 130 ft. W. M. Creech's Seeley 1, 24-1n-14w, rig. A. M. Henry's Honeysette 1, 27-1n-11w, sd 130 ft. Claude Sutherland's Klein 1, 10-3n-14w, dr 300 ft. **Arenac**—C. W. Teater's Withey 1, 5-19n-6e, sd 2810 ft. **Cass**—Guy Obenauer's Neel 1, 6-5s-14w, dr 120 ft. **Clare**—S. J. Higelmire's Van Horn 1, 3-18n-6w, dr 2635 ft. Gulf Ref. Co.'s Ann Arbor 1, 21-18n-5w, wocs 8-inch 782 ft. **Gladwin**—Smith Pet. Co.'s Nash 1, 28-20n-2w, rig. W. E. Ross' Kinyon 1, 18-18n-2e, dr 3399 ft. **Gratiot**—Lakeland Refiner's Munson 1, 26-10n-3w, rig. Victory Pet. Co.'s Thum 1, 13-10n-4w, dr 200 ft. Michigan Chemical Corp.'s Fee 9, 24-12n-3w, dr 600 ft. **Huron**—D. Leonard Prospecting Co.'s Milling Co. 1, 10-16n-15e, dr 940 ft. **Isabella**—Socony Vacuum's Campbell 1, 11-16n-3w, dr 2700 ft. **Kent**—Voorhees Drilling Co.'s DeKleine 1, 14-5n-12w, dr 1900 ft. W. M. Comstock's Donovan 1, 4-8n-9w, dr 550 ft. **Midland**—Sun's State B-1, 9-15n-1w, Dundee 3672 ft, 600 ft water 3761 ft, dr 3883 ft. Daily Crude Oil Co.'s Valentine 1, 15-15n-1e, dr 3300 ft. **Monroe**—Sun's Clampitt 1, 28-8s-6e, dr 450 ft. **Osceola**—Champion Development Co.'s Ealy 1, 30-20n-8w, rig. Huges & Hansen's Berger 1, 35-17n-10w, Dundee 3515 ft, sd 3635 ft. **Tuscola**—Meridith & Rau's Sand Co. 1, 32-11n-8e, dr 2375 ft. **Wayne**—Bellville Oil Co.'s Scheffler 1, 26-3s-8e, 5-in csg 2148 ft.

MISSISSIPPI

Calhoun—L. C. Lucas' B. C. Boland 1, sw sw 9-22n-9e (corrected lcn), dk. S. & O. Properties, Inc.'s G. C. Cooner 1, se ne 12-24n-8e, sd 2120 ft. **George**—Cleve Love et al's J. J. Newman Lbr. Co. 2, c sw 9-1s-8w, elev 111 ft, 10-in csg 1374 ft, top Het 1382 ft, dr 1400 ft. **Hinds**—Cleve Love et al's Montgomery 1, sw se se 28-6n-4w, lcn. S. F. Johnson 1, ne se 29-6n-1w, elev 343 ft, top black shale 3040 ft, top chalk 3097 ft, top Eutaw 3617 ft, top red beds 3657 ft, 7-in csg 3355 ft, sd 3707 ft. Progressive Realty Co. 1, se sw 35-6n-4w, top Wilcox 2750 ft, sd for heavier rig 5325 ft. **Lamar**—Southern Miss. Pet. Corp.'s Morris 1, nw se 4-2n-14w, elev 332 ft, top Het 1138 ft, 10-in csg 1144 ft, top Vicksburg 1615 ft, top Minden lime 2123 ft, top Wilcox 2735-53 ft, ran electrical tester, td 3029 ft Wilcox. **Montgomery**—Dr. T. A. Chichester et al's E. C. Mitchell 1, se nw sw 30-20n-7e, dk. **Pontotoc**—Waldrop, Melvin & Waldrop's Bray 1, sec n½ sw 17-11s-1e, woc surf csg 150 ft. **Simpson**—Goodwill O&G Co.'s Berry 1, se sw 33-2n-4e, elev 307 ft sd repr engine 2600 ft, sandy shale. Cleve Love et al's N. E. Garner 1, sw ne 1-10n-17w, rur. **Yalabousha**—Acme Holding Co.'s Boyle 1, nw nw 33-25n-7e, sd 1690 ft shale and pyrites.

OKLAHOMA

Atoka—Shelton et al's Lee 1, ne nw sw 2-4s-10e, sd 3110 ft. **Choctaw**—Ross et al's Hardy 1, sec nw 21-7s-15e, ur 10-in td 806 ft. **Cimmaron**—Barnsdall's School Land 1, c nw se 35-5n-25ecm, lost circulation, td 5337 ft. **Cleveland**—Delaney et al's Burgher 1, sec sw 12-7n-2w, test and making oil, td 7682 ft. **Coal**—Carter's Mote 1, c e½ sw nw 19-2n-9e, dr 1490 ft. **Comanche**—Roach et al's Green 1-A, sec sw 2-1n-13w, sd 760 ft. Midnite Oil's Gowe 1, nwc 20-2n-13w, co td 325 ft. **Cotton**—Turner et al's Collins 2, sec ne 18-4s-10w, abd 1307 ft. Texas' Cathey 1-B, se ne ne 6-5s-1w, sd td 5685 ft. **Creek**—Jackson's Berryhill 1, nwc 1-18n-10e, abd 2320 ft. **Garfield**—I.T.I.O.'s Kichin 1, c se se 17-22n-5w, rig. Kendallet et al's State 1, swc 13-23n-3w, td 1070 ft, to bp test gas sand. Champlin's Boehm 1, swc ne 4-24n-8w, ru. **Garvin**—Farmers Mutual's School Land 1, sec nw 16-5n-5e, ru. **Hughes**—Phillips' Becker 1, ne nw sw 8-5n-10e, to set ½-in tubing to test, td 6283 ft. Phillane's Morrison 1, sec sw 13-9n-10e, co after shot td 4036 ft. **Kay**—Nye's Willin 1, sec sw 24-27n-4e, sd show 3016-26 ft. Cheveller et al's Osage 1, nwc 33-27n-5e, sd haf td 3082 ft. Helmerich & Payne's School Land 1, sw se sw 16-28n-1w, td 2820 ft, to pb to test. Shaffer et al's McKee 1, ne sw 20-28n-1w, sd td 2500 ft. **Kiowa**—Anderson-Prichard's Johnson 1, 10-7n-20w, fsg 1213 ft. Bstis et al's Dreve 1, c nw nw nw 23-7n-20w, rig. Gauntt et al's Parke 1, nwc se 29-7n-20w sd for csg td 1075 ft. Anderson-Prichard's Cribbs 1, sec ne 28-7n-19w, ur td 1480 ft. **Lincoln**—I.T.I.O.'s Bailey 1, nwc ne 2-12n-5e, dr 1820 ft. **Logan**—Superior Oil's McCulley 1, c w- nw nw 26-16n-4w, ru. **Marshall**—Hughes Drlg.'s Vittitoe 1, c ne ne 11-5s-4e, dr 7110 ft. **Noble**—Cromwell-Franklin et al's Holcomb 1, c sw nw 34-20n-1w, abd 5377 ft. Hollenback et al's Mathews 1, c sw nw 9-20n-1e, mit. Big Chief's Hoy 1, sec sw 33-21n-2w, lcn. **Okfuskee**—Titus' Lehmar 1, c ne ne 26-11n-8e, lcn. Burke-Greis' Caps sec 7-13n-7e, sd 3227 ft. **Osage**—Wah-Sha-She's 1, nec sw 4-28n-9e, dr 1685 ft. **Pawnee**—Owens et al's Riddle 1, c e½ e½ nw 8-23n-5e, dr 3120 ft. **Pottawatomie**—Smith et al's Henderson 1, nwc ne 4-5n-3e, dr 725 ft. Farmers Mutual Waite 1, nec nw 9-5n-5e, to set 6-in top Viola. Atlantic's McCurry 1, nw ne sw 6-6n-4e, lcn. **Payne**—Sinclair Prairie's McQuain 1, ne nw ne 22-19n-1e, lcn. **Pontotoc**—Union Dev.'s Abbott 1-A, sw nw ne 34-3n-6e, dr 1720 ft. Lynch et al's Parker 1, swc se 17-4n-8e, sd 4535 ft. Anderson-Prichard's Mayler 1, sec sw 19-3n-8e, dr 1200 ft. **Roger Mills**—Central's Lamb 1, sec 27-14n-21w, rig. **Seminole**—Indian States et al's Johnson 1, sec ne 2-6n-5e, ur td 2573 ft. Pure's Lack 1, se sw nw 3-6n-5e, top Wilcox 4158 ft, dr 4180 ft. Denver P & R's Mathis 1, sw nw sw 7-6n-6e, cmt 7-in 3700 woc. Pine's Wright 1-A, se se nw 16-6n-6e, pipe collapsed td 3672 ft. Smith's Coker 1, nw ne ne 25-7n-5e, comp 15 bbls td 3012 ft. Wood Oil's Cully, swc nw 34-7n-5e, abd 4411 ft. Villines et al's Reed 1, nec 35-7n-5e, comp 75 bbls td 3005 ft. Villines et al's Edgeman 1, sec 17-7n-6e, rig. McQueen et al's Harris 1, swc 30-7n-6e, ru. Marbett's Breeding 1,12-7n-8e, sd 1094 ft. **Washita**—L. B. McShirter's Fee 1, nw sw sw 34-8n-19w, fsg td 2147 ft.

EAST TEXAS BORDER COUNTIES

Marion—Tom Bell's Carrie Moseley 1, D. Lane sur, ran electrical tester, arr set csg, td 2524 ft. Arkansas Fuel Oil Co.'s Wallace Johnson 1, Alexander Johnson sur, mim. **Panola**—Texas Co.'s Claude Adams 1, Thos. Cox sur, 13⅜ in csg 579 ft, 9⅝ in csg 5940 ft, elev 287 ft, top lower Marine 7792 ft, dr 8175 ft hd sand. Walters et al's Phomplin 1, W. Moore sur, woc 12½ in csg 68 ft. Petroleum Heat & Power Co.'s Frost Lbr. Co. 1, Jno. H. Gibson sur, lcn. J. W. Bird 1, Geo. Gallsty sur, lcn. **Sabine**—Petroleum Heat & Power Co.'s Jasper State Bank 1, R. McDonald sur, dr 2527 ft brown gumbo. **Shelby**—C. L. Cope's Pickering Lbr. Co. 1, English sur, rur. Vaughn Prod. Co.'s Pickering Lbr. Co. 1, Brooks sur, mim. Shelby Oil Co.'s Windham 1, A. K. English sur, cored saturation 3397-3422 ft, treated with 1500 gallons acid, swabbing oil, td 3422 ft; J. C. Windham 1, nwc Shelbyville townsite, lcn. A. R. Blount's Ethel Lovett 1, block 55, Shelbyville townsite, lcn. Mallard & Locke's (formerly DeArmon & Mallard) W. E. Roller 1, J. Sullins sur, top anhydrite stringer 3940 ft, core 3952 ft. Redditt & Gray's Pickering Lbr. Co. 2, sec 237.8 ac tract, P. J. Loggins sur, dr 2020 ft.

SOUTH TEXAS

Atascosa—Allison's Mischwitz 1, Garza sur, dry and abd 250 ft. Altgelt's Vanegas 1, Garza gr, dr 2650 ft. Richardson's Fisher 1, AB&M sur, dr 765 ft. **Bastrop**—Belcher's Roemer 1, Harris sur, dry and abd, 2221 ft. Franklin's Thaxton and Yarrington 2, Bangs sur, dr 1100 ft. Ogden & Riddle's Riddle 1, H. Warnell sur, ru to pump, top ch 1763 ft, set 5 in at 1563 ft. Riddle's Callaghan 1, Mayes League 19, dry and abd 2715 ft. **Bexar**—Adams & Bassett's Stumberg 1, sur 53, dr hrd rock 60 ft. Ball & DuBose's Miller 1, sur 55, set 5½ in csg 1372 ft, perf 1357-72, dr plugs. American's Oliver 5, Rodriguez sur, still sd. Fain, Harrison & Jenkins' Hansen 1, sur 55, wo rig. Johnson's Brown 1, sur 55, dr 950 ft. Nami's Fields 1, Bustillos sur, still sd. Philtop's Patton 2, Rodriguez sur, still sd. **Burleson**—Red Bank's Coffield 1, Sante sur, testing on pump. **Caldwell**—Banks Miller's Martindale 1, sur 18, dr 3200 ft. McNeill's Wattinger 1, Pace sur, dr 1540 ft. Richardson's Schawe Estate 1, Maxwell sur, still sd, 905 ft. Shield's Walker 1, Martinez sur, topped Serpentine 1230 ft, saturated 1312-36, running csg. Tinkle's Blackwell 2, Roe sur, pumped about 10 bpd, wo spudder, to dd. **Frio**—Thomson's S. A. Joint Stk. Lnd. Bk. 1, still sd. **Gonzales**—Heard, Hall & Young's Clark 1, Armistead sur, mi heavier rig. Heard, Hall & Young's Walker 1, Hargis sur, lcn. **Guadalupe**—Clark & Weinert's Anderson 2, sur 11, dr 2275 ft. Martin's Gonzales 1, Derison sur, dr 625 ft. Struthers' Moursund 1, sur 254, set sur csg. Wyatt's Anderson 1, Emmett sur, dr 2250 ft. **Kendall** — Dorsey's Flannagan 1, Sweeney sur, dr 100 ft. **Kerr**—Starkey's Saul 1, sur 47, dr 150 ft. **Kimble**—Plateau's Anderson 1, Duener sur, pb and sdtr 1375 ft, dr 1535 ft, had crooked hole at 1816 ft. Dawson's Wilkinson 1, sur 23, sd for repairs. **Maverick**—Wellington's Chittim A-1, I&GN RR sur, pb to 5560 ft, completing. **Medina**—Cromwell's Tondrie 1, Rogers sur, sd. Gaston & Brown's Sanne 1, sur 105, ran liner, testing 903 ft. McCallum, Forber & Johnson's Riff 1, sur 325, dr 75 ft. Gee & Tarver's Conrad 1, Keppler sur, rig moved off, wo new rig, 575 ft. Pepper & Taylor's Saathoff 1, sur 231, dr 590 ft. Schweer's Schmidt 1, sur 273, dr 900 ft. Walker's Riff 1, sur 42, dr 654 ft. **Milam**—Morgan's Johnson 1, Acosta sur, dr 1900 ft.

Tuxedo's Graham 1, Cronea sur, topped Edwards hrd to 1806, lost cores 1806-8, set tubing on packer. Western Gulf's Battle 1, Leal sur, lcn, leases extended.

LAREDO DISTRICT

Duval—Arkansas' Cuellar 1, BBB&C RR sur, squeezed, perf 5109-20, cement set, total depth 5520 ft. Circle's Mew Estate 1, sur 287, mi rig. Costa's Palacios 1, sur 3, dr 3925 ft. Duncan's Worden & Drought 1-B, Soen sur, lcn. Fitzsimmons' fee 1, sur 293, lcn. Foster's Foster 1, sur 268, lcn. Haynes & Conners' Fitzsimmons 1, Poitevent sur, wo rig. McBride's Murphy 1, sec 120, dr 1400 ft. Standard Texas' Garcia 1, Conception gr, prep to dd, sd 2400-10 ft, oil show, drill stem test rec. 5 ft pipe line oil, no water, no pressure. **Jim Hogg**—Humble's Bass 1, San Rafael gr, dr 5990 ft. **La Salle**—Garner's Yeager 1, sur 39, sw sd 1444-55 ft, 1578-1587, reaming. **McMullen**—Alaska-Tex's Messer 1, Poitevant sur, drill stem test 1220-30. Boysen & Jones' Nueces L. & L. Stk. 2, Williams sur, dr 885 ft. Duncan's Nueces L. & L. Stk. 1, BS&F sur, dr 100 ft. Red Bank's Nueces L. & L. Stk. 1, sur 9, dr 350 ft. Wagner's Hagist 1, Mills sur, wo rig. Wagner's Atkinson 1, Dean sur, ru. Winebrenner's Teal 2, Kuykendall sur, dr 685 ft. **Starr**—Borah's Garcia 1, por 71, wo new rig. Henshaw Brother's Rodriguez 1, por 88, lcn. Republic's Mendoza 1, coring below 1225 ft. Sun's Young 1, por 79, perf 2715-26, testing, total depth 3008 ft. Wheelock & Collins' Guerra 1-A, Santa Cruiz gr, dr 6310 ft. Zimmerman's Starr Cty. Cattle 1, por 89, mim. **Webb**—Houser's Garcia-Villareal 1, sur 720, moving in. Killam's Cuellar 1, share 2, drilling 2535 ft.

CORPUS CHRISTI DISTRICT

Brooks—Atlantic's Mestina 1, share 10, dr 2010 ft. Standard of Texas' Garcia 1, share A, drilling 2125 ft. **DeWitt**—Mar-Jo's McCurdy 1, 6 miles n Cuero, set surface casing. **Hidalgo**—Harding & Pantano's Woodey 1, block 202, drilling 2500 ft. Johnson's Daskam 1, blk 33, por 45, pulled in derrick 3735 ft, waiting on new one. Phillips' Flores 1, por 39, rigging up. Smith's Fairbanks and Young 1, por 46, fishing 2545 ft. Wheelock & Collins' Temple Lumber Co. 1, La Blanca and Llano Grande grants, rigging up. **Jackson**—Magnolia's A. West ranch 2, Ramon Musquiz sur, dr to 7217 set 7 inch 5680 ft, woc. **Jim Wells**—Mills Bennett's Perkins 1, La Vaca gr, dr 2115 ft. Humble's Tarrant 1, sur 205, coring 6034 ft. Magnolia's Valades Heirs 1, La Anima Sola gr, drilling 6130 ft. Fred P. Schwab's James Boehm 1, Montemayor gr, lcn. **Kleberg**—Pure's State 1, tract 522, drilling 4385 ft. **Live Oak**—J. K. Adair's Schultz 1, Pearce sur, spudded. Chew's Cartwright 1, J. Poitevent sur, dr 4065 ft. Fant City's Alamo 1, block 15, coring 1268 ft. R. H. Feltner's Reed 1, I&GN sur No. 15, ru. Fred P. Schwad's Terrell 1, Henry sur, lcn. Stewart Oil Company's Nations 1, sec 18, set casing 1780 ft, wocs. **Nueces**—Coastline's State 1, section 320, perforated 8570-80 and testing. Southern Mineral's Yakey 1, section 38, drilling 6150 ft. Union's Minnie Brown 1, drilling 8400 ft. **Refugio**—Allen's Rooke 2, Aldrete gr, spud. **San Patricio**—Atlantic's Jones 1, sec 72, plug back from 6010, perforate 5297-5300 ft, testing. Humble's Carmody 1, section 22, drilling 4135 ft. **Victoria** — Superior's Robertson 1, Ricker sur, moving in.

WEST TEXAS

(This report is confined to the north portion of the Permian Basin)

Andrews—Atlantic Ref. Co.'s University-Texas Co. 1, near c nw ne sec 26, blk 11, elev 3289 ft, top anhydrite 1455 ft, base salt 2680 ft, top Yates 2760 ft, tested dry 4530-4600 ft, dr 4610 ft. S. H. Forgeron et al's Lockhart-Brown 1, c ne ne PSL sec 20, blk A-41, elev 3248 ft, top anhydrite 1660 ft, salt series 1690-2720 ft, top brown lime 3995 ft, used 500 and 1500 gals acid at 4483 ft, coring 4530 ft. Frank S. Perkins et al's E. P. Cowden 1, c ne nw PSL sec 14, blk A-55, elev 3114 ft, top anhydrite 1162 ft, salt series 1250-2530 ft, top brown lime 2630 ft, top Yates 2710 ft, td 8012 ft, pb by stages and tested water, sd 7714 ft. R. R. Rhodes-J. D. Tompkins et al's Emma Cowden-Sinclair 1, ne ne nw T&P sec 1, blk 44, T-2-N, elev 3166 ft, top anhydrite 1630 ft, top Yates 2720 ft, top first lime 3810 ft, run cas, td 4150 ft. **Bailey**—Geo. Etz et al's I. C. Enochs Land Co. 1, c labor 66, league 182, Floyd C.S.L. sur, elev 3788 ft, top lime 3173 ft, sd in water 4295-4306 ft. **Cochran**—Helmerich & Payne, Inc.'s Westheimer-Daube 1, labor 18, league 147, Stonewall C.S.L. sur, elev 3899 ft, top anhydrite 2230 ft, top Yates 2940 ft, top San Andres 3680 ft, top first lime 3680 ft, dry and abd 5205 ft. Honolulu Oil Corp. et al's C. S. Dean 1-91, League 91, Lipscomb C.S.L. sur, elev 3729 ft, top anhydrite 2210 ft, top Yates 2870 ft, top brown lime 3830 ft, top solid lime 4200 ft, show oil 4995 ft and 5030-35 ft, dry and abd in sul w 5063-67 ft. Devonian Oil Co.-Honolulu & Cascade Pet. Co.'s Duggan 1-C-8, nec labor 8, league 54, Oldham C.S.L. sur, elev 3647 ft, top anhydrite 2310 ft, top Yates 2920 ft, top brown lime 3860 ft, oil pay 5003-33 ft, cem cas and rust. T. B. Duggan 1-B-17, near nec labor 17, league 55, Oldham C.S.L. sur, elev 3685 ft, pay 5013-5060 ft, used 16,000 gals acid, flowed 222 bbls 31.3 gravity oil initial. The Texas Co.'s Mallett L&C Co. 1, near nec PSL sec 7, blk G, elev 3623 ft, top anhydrite 2330 ft, top Yates 2940 ft, top lime 4280 ft, top pay 5039 ft, pb fr sul w 5062-5122 ft to 5058 ft, used 5000 gals acid completed swab 7 bbls fluid per hr, 20 percent bs&w. **Dawson**—Ray Albaugh et al's Dewey Hogg 1, c se se T&P sec 17, blk 34, T-4-N, elev 2895 ft, top anhydrite 1550 ft, sd in water zone, td 4120 ft. **Floyd**—Mills Bennett Production Co.'s Thos. Montgomery 1, nec F. J. Latham sur No. 2, A-520, elev 3129 ft, top lime 3255 ft, lost dp at 5082 ft, pb to 3000 ft, dr by junk 4337 ft. **Gaines**—Chas. M. Cope-J. L. Frick & Osage Drl. Co.'s T. S. Riley-Atlantic 1, c sw nw W. T. Ry. sec 249, blk G, elev 3383 ft, top anhydrite 2053 ft, salt series 2120-2970 ft, top Yates 3120 ft, top brown lime 4150 ft, top solid lime 4730 ft, used 1500 gals acid in lime 5071-98 ft, flowed 135 bbls 32.4° oil initial 1-in choke. Eastland Oil Co.'s R. C. Dunbar-Stanolind, nw nw sw PSL sec 24, blk A-12, elev 3544 ft, top anhydrite 1620 ft, top Yates 2882 ft, top brown lime 3730 ft, top white lime 4325 ft, td 4640 ft, re-cem cas and liner. J. T. Perryman et al's C. H. Doak-Pure 1, c nw ne D&W sec 43, blk H, elev 3165 ft, dr 1960 ft. V. R. Biddle & Warr's J. B. Brown 1, c ne ne C&M sec 26, blk G, cem sur pipe. **Garza**—Gulf Oil Corp.'s S. P. Swenson Cattle Co. 1, c nw H&GN sec 25, blk 2, Ordovician test, elev 2274 ft, dr lime 5780 ft. **Hockley**—E. T. Marion et al's P. F. Lawless 1, swc labor 58, league 39, Maverick C.S.L. sur, sd 88 ft. Skelly Oil Co.'s Ellwood 1, league 15, Howard C.S.L. sur, cem sur pipe. Penn Royalties, Inc.'s P. F. Lawless 1, near swc labor 58, league 39, Maverick C.S.L. sur, sd 85 ft. Stanolind's Alex Slaughter 2, swc labor 75, league 37, Zavala C.S.L. sur, dr 1150 ft. **Kent**—B. Dolman et al's C. V. O'Keefe 1, ne ne nw H&GN sec 50, blk 1, sd 125 ft. **Lynn**—John L. Baldridge et al's Alamo Lumber Co. 1, ne sw sw HE&WT sec 151, 6 mi w New Home, elev 3267 ft, top anhydrite 2130 ft, top San Andres lime 4170 ft, cem split cas, td 4450 ft. **Martin**—W. D. Anderson et al's J. R. Vance 1, c se T&P sec 9, blk 36, T-1-S, elev 2699 ft, top anhydrite 1510 ft, top salt 1595 ft, dr 2480 ft. **Terry**—L. E. Hults et al's P. J. Ross-Gulf 1, swc nw C&M sec 6, blk D-14, elev 3548 ft, top anhydrite 2270 ft, top Yates 2940 ft, top brown lime 3970 ft, top solid lime 4170 ft, trace oil 5070-5083 ft and free oil 5095-5107 ft, dr 5110 ft. **Yoakum**—J. L. Crump & Black Bros.' Bennett 1-B, ne nw nw sec 695, cem 7-in 4868 ft, td 4870 ft. Fred M. Allison Prod. Co. (was J. C. Maxwell's) Bennett 1, ne sw nw sec 695, elev 3554 ft, dr 2610 ft. R. H. Gill et al's S. J. Dixon-Gulf 1, se se ne sec 611, blk D, lcn. Gulf States Oil Co.'s E. A. Graham-Gulf 1, near c s½ sw sec 267, blk D, elev 3634 ft, top anhydrite 2390 ft, dry and abd in sul w 5360-75 ft. Helmerich & Payne, Inc.-Continental's S. O'Dowd-Ohio 1, nec sec 896, elev 3628 ft, top anhydrite 2100 ft, top brown lime 3840 ft, lost tools in big gas 4955 ft, pb to 4827 ft, re-dr pay 4955-5020 ft, td 5035 ft, run tubing. Magnolia's J. D. Webb 1, swc ne sec 477, blk D, elev 3699 ft, top anhydrite 2370 ft, top Yates 3140 ft, top brown lime 4160 ft, top solid lime 4597 ft, pb fr sul w 5626-39 ft to 5380 ft, shot 285 qts nitro 5304-80 ft, used 3000 gals acid, testing 1500 ft 18 gravity oil. Shell's Dora Roberts 2, nw sw ne sec 793, blk D, elev 3691 ft, top anhydrite 2078 ft, dr 4505 ft.

TEXAS GULF COAST

Ft. Bend—Strake's Dew 1, Sugarland, D. Wright sur, preparing to sdtr at 6360 ft; same operator's Sugarland Industries 2, W. Stafford dsur, dr shale 5939 ft. Sam Wilson's Wood 1, Fresno area, preparing to spud. **Galveston**—Sun's Atkins 1, Bolivar, B. Frank sur, abn 7364 ft; same operator's Cade 1, Bolivar, A. Dickson sur, sd 8094 ft. **Harris**—Merit's Smith 1, Crosby, F. Rankin sur, abn 7901 ft. **Jasper**—H. G. Mayo's Cartwright 1, Legrande-Magnolia Springs, Legrande sur, woc 2060 ft. **Madison**—Scarborough and White's Cannon Heirs 1, nw of Madisonville, D. Arriola, sd 685 ft. **Matagorda**—J. K. Dorrance's Adamick 1, Blessing, I&GN blk 7, abn 8525 ft. Sun's Robbins 1, n of Citrus Grove, G. H. Vandeveer sur, testing 9250 ft. **Montgomery**—J. Smith et al's Scott 1, Dacus, F. A. Wheeler sur, woc 384 ft. **Tyler**—Glenn H. McCarthy's McShane 1, s of Spurger, BBB&C No. 13, abn 8341 ft. **Waller**—David B. MacDaniel's Dinkins 1, L. Pearsall sur, dr shale 6388 ft.

ROCKY MOUNTAIN AREA

MONTANA

Carbon—R. C. Tarrant's 1, csl se nw 3-6s-18e, dr 2105 ft. **Fergus**—Baugham & Singley's Skaggs 1, cnw sw 7-15n-20e, dr 810 ft. **Petroleum**—O. B. Canfield's Government 1, se se ne 21-17n-24e, co 600 ft.

WYOMING

Carbon—Cunningham Oil Co.'s Union Pacific-Cronberg 1, ne se ne 3-23n-79w, dr 1985 ft. **Hot Springs**—J. W. Bales' Government 1, cwl ne sw 28-43n-92w, running tubing to test. **Lincoln**—H. C. Harris' Government 1, se nw nw 23-21n-117w, dr 500 ft. **Sublette**—Progressive Oil Co.'s Haddenham 1, cne se 18-28n-113w, dr 800 ft. Wyoming Petroleum Co.'s Charles Budd 1, cne ne 10-29n-113w, sd 250 ft. **Weston**—John Brorby's George 1, sw se nw 12-47n-64w, fsg 2080 ft td.

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All of these bustling, metropolis cities of the great Southwest are only an hour or so apart, when you fly *"The Great Plains Route"*: Chicago, Kansas City, Wichita, Oklahoma City, Dallas, Ft. Worth, San Antonio, Houston and Brownsville.

RELAX, STRETCH OUT AND SLEEP—
in Braniff's down-soft, full-reclining lounge chairs. For Tickets, Schedules, Anywhere call your favorite travel agent or Braniff Airways.

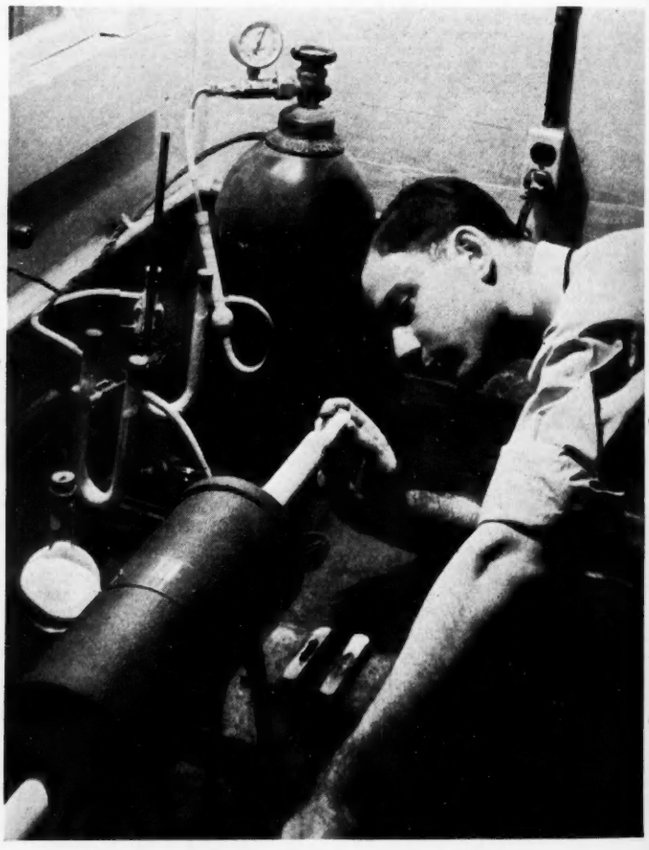
BRANIFF
B-Liners

UNIFORM, SOUND CASTINGS
the result of...

Typical of the latest devices that make for efficiency in Dedman's new electric furnace, is mechanical pouring by finger-tip electrical control.

SCIENTIFIC ACCURACY

. . . due to the use of the most modern electric melting equipment and analysis control laboratory under the direction of **experienced** metallurgists.



Photograph shows metallurgist in the Dedman Analysis Control Laboratory using the very latest type Carbon Combustion Train . . . one of the many painstaking steps for keeping customers' steel specifications well within the allowed tolerances.

DEDMAN CASTINGS

- ★ Save machining losses
- ★ Hold the enormous pressures of wells in high pressure areas
- ★ Win and hold customers for manufacturers of oil field equipment

DEDMAN

FOUNDRY & MACHINE CO.

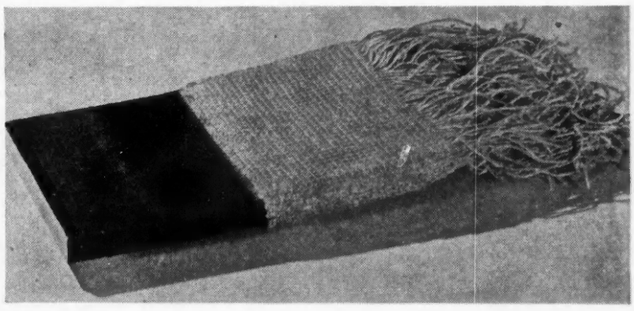
HOUSTON, TEXAS

NEW PRODUCTS FOR THE FIELD
Machinery • Tools • Equipment

ROTARY BRAKE LINING
Johns-Manville

Johns-Manville, 22 East 40th Street, New York, announces development of an entirely new type of woven rotary lining in which cabled yarns are used. These asbestos "cables" are woven into a compact mass, impregnated to increase heat resistance and frictional qualities, and then compressed. The result is an unusually efficient and durable lining for heavy-duty work.

The new lining—known as Style No. 420—is the product of years of research and practical testing of brakes on rotary draw works used in drilling oil wells. It is applicable to wells of all depths, and is particularly recommended for



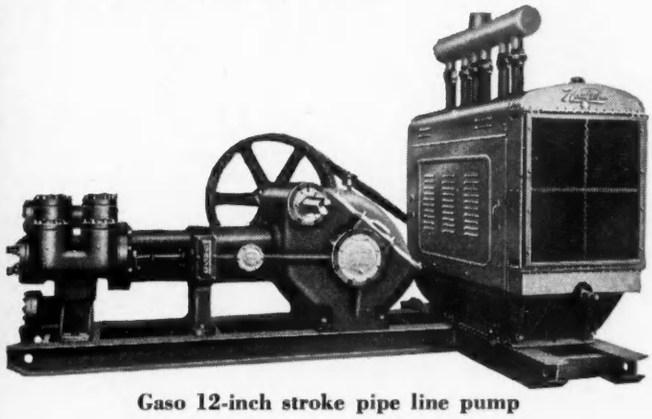
Johns-Manville "420" Rotary Brake Lining

deep drilling. A principal feature of the material is unusually even feed-off, giving better control of drilling. The lining also is designed so that even at the extreme temperatures caused by heavy loads, braking efficiency remains high.

Tests have demonstrated that the lining has long life. Its use also reduces the scoring of drums, resulting in more efficient drum service.

PIPE LINE PUMP
Gaso Pump & Burner Mfg. Co.

Gaso Pump & Burner Manufacturing Company, Tulsa, Oklahoma, has announced a new 12-inch stroke pipe line pump with approximately double the capacity rating of any other of the company's models.

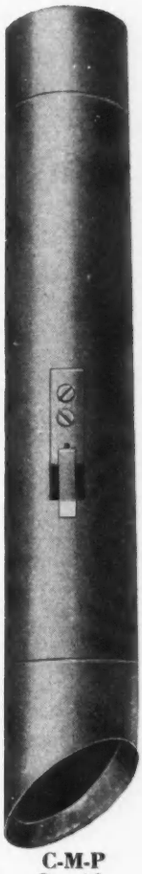


Gaso 12-inch stroke pipe line pump

It has fluid cylinders of interchangeable liner type, 4 to 7 inches diameter, and capacities from 176 barrels per hour at 1500 pounds pressure, to 592 barrels at 500 pounds pressure.

Fluid end is side-pot type, with all valves individually accessible. Assembled on skids with gasoline engine, the complete unit weighs approximately 24,000 pounds, representing, according to the manufacturer, about the largest semi-portable pumping plant that is practical for pipe line service.

The new pump possesses simplicity of design, few, large parts, and rugged construction throughout. Crankshafts are journaled in Timken tapered roller bearings of exceptionally large size, and pinion shafts in Hyatt roller bearings, all roller bearings being sealed off from the crankcase lubricant to prevent adulteration. The pump can be furnished with any type drive, including "V" belt drive to electric motor or gasoline engine, direct shaft to engine through flexible coupling, or electric motor through chain reduction gears.



C-M-P Outside Cutter.

IMPROVED OUTSIDE CUTTER
Houston Oil Field Material Company

The Cutting and Fishing Tool Division of Houston Oil Field Material Company, Houston, Texas, is now operating the improved C-M-P Outside Cutter as a part of this specialized field service.

This drill pipe cutting tool is mechanically operated. It employs no wedge ring in its design, the shell of the tool serving as a wedge ring, thereby allowing the operator to go over the pipe to be cut with a minimum of annular space between the tool and the "fish." The cutter assembly works independently of the shell of the tool, making the distance between the point of cut and the engaged point remain the same. When the operator picks up on the tool, the shell (or body of the tool) moves up over the cutting assembly and forces the knife against the pipe to be cut. The cutter knife is actuated by the inclined plane on the shell, which is substituting for a conventional wedge ring.

In event of failure to make the cut, this tool, according to the manufacturers, easily strips out because only the cutting edge of the knife has to be broken off by reason of it being hinged at the top, instead of the bottom, where the entire knife would lay against the pipe to be cut.

DRILL PIPE ELEVATOR
American Iron & Machine Works Company

American Iron & Machine Works Company, Oklahoma City, Oklahoma, has a new drill pipe elevator, principally designed for greater speed and safety.

One of the outstanding advantages is the improved latch which enables the operator to unlatch the gate by moving

American Iron drill pipe elevator

right or left handle slightly away, thus preventing any damage to fingers and hands. Another feature is that the elevator can be used for either fourble board or finger board racking.

Made with a universal swivel joint which allows alignment of elevator on pipe to the extent that badly worn tool joints can be pulled with elevator without danger of breaking jaws apart and causing accident.

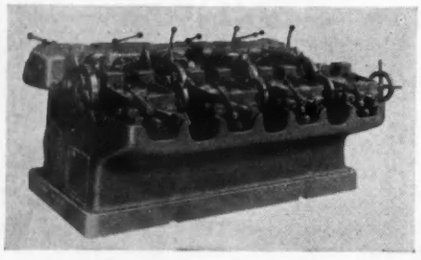
The universal swivel joint, as well as all other parts, can be repaired or replaced on derrick floor.

THREADING MACHINE

Landis Machine Company

Landis Machine Company, Waynesboro, Pennsylvania, announces a new quadruple head threading machine, which offers four threading units assembled on a single bed structure. Production possibilities for certain classes of threading operations are greatly increased because of the two additional threading units. Likewise, this machine is particularly adaptable to jobbing and maintenance work, where it may be desirable to set each die head on a separate diameter, thus eliminating the necessity for frequently changing the chasers.

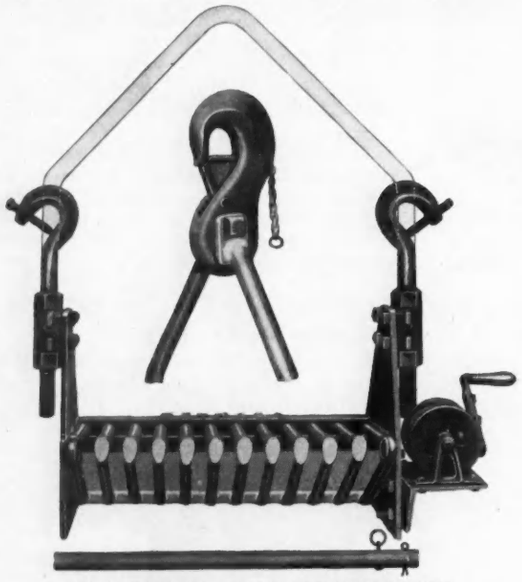
The quadruple head threading machine is equipped with a selective type gear box which provides eight threading



Landis Quadruple Threading Machine.

speeds. The gears are cut from chrome-nickel steel and are hardened and burnished to insure smoothness of operation and maximum wearing qualities. Anti-friction bearings are employed throughout for all gear shafts. The main spindle is driven by a spiral bevel gear and is mounted on a pre-loaded anti-friction bearing at the die head end. This feature eliminates the possibility of any wear or end play in the spindle. The guides are covered by telescoping steel guards which protect them from chips; and in addition, wipers are provided at the rear of the carriage which reduces the possibility of chips working under the carriage and causing excess wear of the guides.

Provision is made on the threading machine to equip the left hand spindle with the Landis Reverse Taper Die Head. The center distances between die heads on the quadruple threading machine are the same as the center distances on the double head machine. Since the center to center measurements are comparatively short, one man can conveniently operate the four die heads and obtain the maximum efficiency of the machine.



ROD RACKS—FIVE STOCK SIZES

Size	Stands 5/8" Rods	Stands 3/4" Rods	Stands 7/8" Rods	Stands 1" Rods
No. 10	90	80	70	60
No. 11	99	88	77	66
No. 12	108	96	84	72
No. 14	126	112	98	84
No. 17	153	136	119	102

DISTRIBUTED BY ALL LEADING SUPPLY STORES

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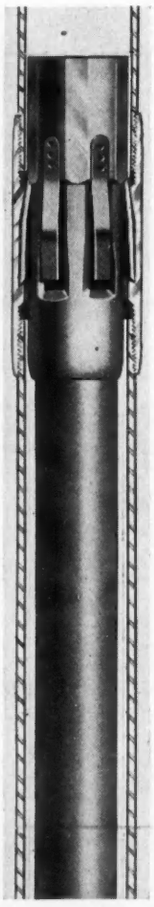
LINER HANGER

Security Engineering Company

Security Engineering Company, Incorporated, Whittier, California, has announced a new type liner hanger that has no slips to jam, no complicated setting mechanisms to twist or turn, and nothing to get out of adjustment. It is unusually simple in its setting action and eliminates any danger of hanging the liner too high or too low in the hole. Moreover, when set, it will not move down the hole under the heaviest liner load.



Security Liner Hanger.

This new liner hanger consists essentially of two parts—the hook collar and the liner hanger itself. The hook collar is made up in the casing string so that when the casing is landed this collar will be at the point where the liner is to be supported. The liner hanger makes up on top of the liner and has a number of strong spring fingers equally spaced around its circumference. These springs are so designed that, as the liner is lowered through the casing, the ends of the springs are pressed in and cannot contact the casing surface. This prevents any possibility of the fingers catching in the regular couplings. However when the hanger reaches the specially designed recess of the hook collar, the springs expand, catch on the supporting shoulder, and lock the hanger against further downward movement. The entire setting operation is absolutely fool-proof, for it is only at the correctly formed recess in the supporting collar that the spring fingers expand outwardly to lock the hanger against further downward progress. Withdrawal is equally simple and positive, for a straight pull on the run-in string contracts the springs and completely frees the hanger.

The supporting springs are so mounted in the liner hanger body that each spring end rests against a recessed shoulder. This shoulder carries the entire thrust load of the spring and machine screws, which carry none of the thrust load, serve to hold the springs in place. Due to this engineered construction each individual spring in the liner hanger will carry a safe load in excess of 20,000 pounds and the various sizes of hangers are designed with a sufficient number of springs to afford an ample safety margin for the heaviest loads.

Since the hook collar becomes an integral part of the casing string it is designed with an outside diameter no greater than the couplings and an inside diameter no smaller than that of the casing. Nothing projects on either the inside or outside of the string to interfere with running the casing or with any tools that may be subsequently run through the casing.

An important feature of the hook collar liner hanger is that, because of its simple construction requiring a minimum amount of steel, the liner hanger can be made of "Securaloy" Drillable Metal in addition to the conventional all-steel construction. When made of "Securaloy" the liner hanger can be drilled up and circulated out of the hole when occasion demands, and the short spring fingers (the only steel used in the construction) will fall to the bottom of the hole where they can be side-tracked or picked up with a basket bit.

The hook collar liner hanger is available in either plain or packer types as desired. The plain type is for liner support only, while the packer type has a lead seal that packs off inside the casing.

TUBING PACKER

Kibele Manufacturing Company

Kibele Packer.

Kibele Manufacturing Company, Dallas, Texas, has introduced a new valve-in-head tubing packer, which does not use slips.

It is equipped with Neoprene cups that seal tightly the instant the packer valve is closed and pressure is applied. The packer can therefore be raised or lowered or withdrawn from the well with ease as soon as the pressure is released.

A piston valve in the packer head can be locked either open or closed. It is shown locked closed in the accompanying illustration. Tubing is turned to the left and lowered when locking and the reverse employed when opening.

Various tests on this packer reveal that it is suited where conventional packers are ordinarily employed and is also well adapted for air- and gas-lift methods.

CUT-OUT SWITCH

International Derrick & Equipment Company

International Derrick & Equipment Company, Columbus, Ohio, has recently placed on the market a new cut-out switch designed to shut down the prime mover on a pumping well when a part of the pumping rig breaks or gets out of adjustment. This cut-out switch may be installed on a standard rig, a geared pumping machine, a chain rig, or a jack, and may be used to shut down an electric motor or a gas engine of any type.

The device is built in two units, one unit for attachment to the polished rod and the other unit for attachment to the cross beam equalizer of a twin-crank pumping machine. The polished rod switch is hooked up in such a manner that it will shut down the prime mover when the relative positions of a point on the well end of the walking beam are changed—either increased or decreased. A double throw mercoid switch is attached to the well end of the beam, either to the beam itself or the mule head or other type of beam head. The switch lever is held in the normally-open position by a vertical rod which is clamped rigidly to the polished rod.

The vertical rod is attached to the switch lever by means of a detachable connection so that any over-travel in either direction will not damage the switch. The equalizer switch is applied to one arm of the cross beam equalizer in a twin-crank pumping machine. If one pitman or wrist pin should break, or if the walking beam should be distorted transversely from any other cause, the tilting of the equalizer beam in either direction will close the mercoid switch, thus shutting down the prime mover.

An alarm circuit may be installed to indicate when any particular well is shut down. A bell or a system of lights may be installed in the lease house or a light at each location.

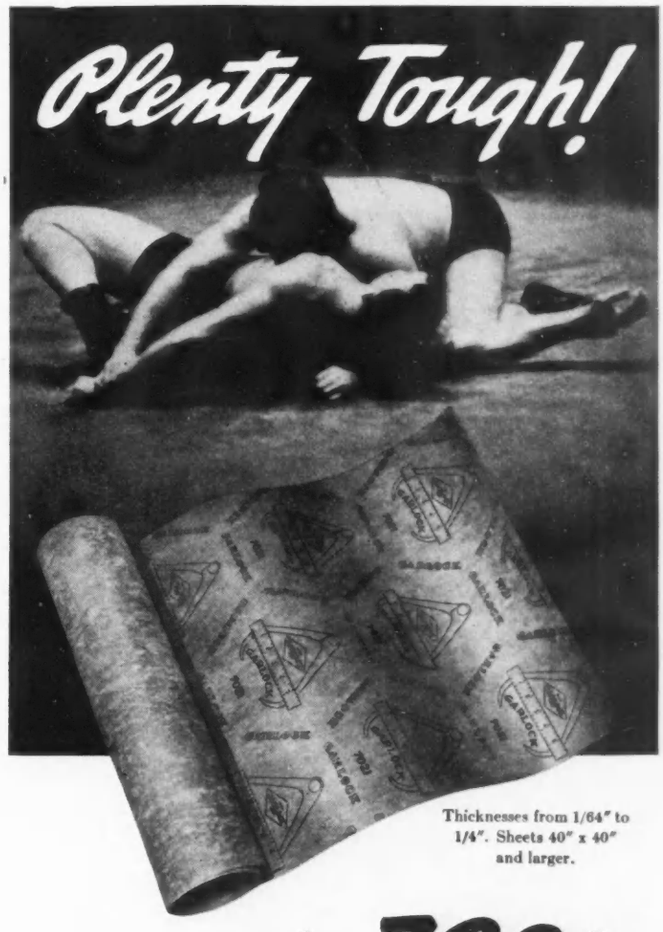
UNION LINE BLINDS

Hamer Oil Tool Company

Hamer Oil Tool Company, 2911 Cherry Avenue, Long Beach, California, recently introduced the new union line blinds, which provide a highly efficient, positive shut-off, eliminating loss of time, fire hazards and costly maintenance encountered in conventional methods.

It is possible for one man to change the union line blind from an open line position to a closed line position in less than one minute by a few simple turns of the gear head with a bar.

The blinds cannot sand up, and leaks are unknown for the reason that packing is arranged to take an extreme mash tight position as well as a pressure seal tightness. Made of steel throughout, and so designed as to be practically everlasting.



Garlock 7021

PACKING, like wrestlers, has to be plenty tough to withstand the grueling punishment handed out these days. To stay in the front ranks and stand out above the crowd, both must have "what it takes."

GARLOCK 7021 Compressed Asbestos Sheet Packing does have "what it takes." It has never been downed by any gasketing job. It stands up against the most severe conditions, such as super-heated steam and light oils at high temperatures. When ordinary gasketing materials fail GARLOCK 7021 can be depended upon.

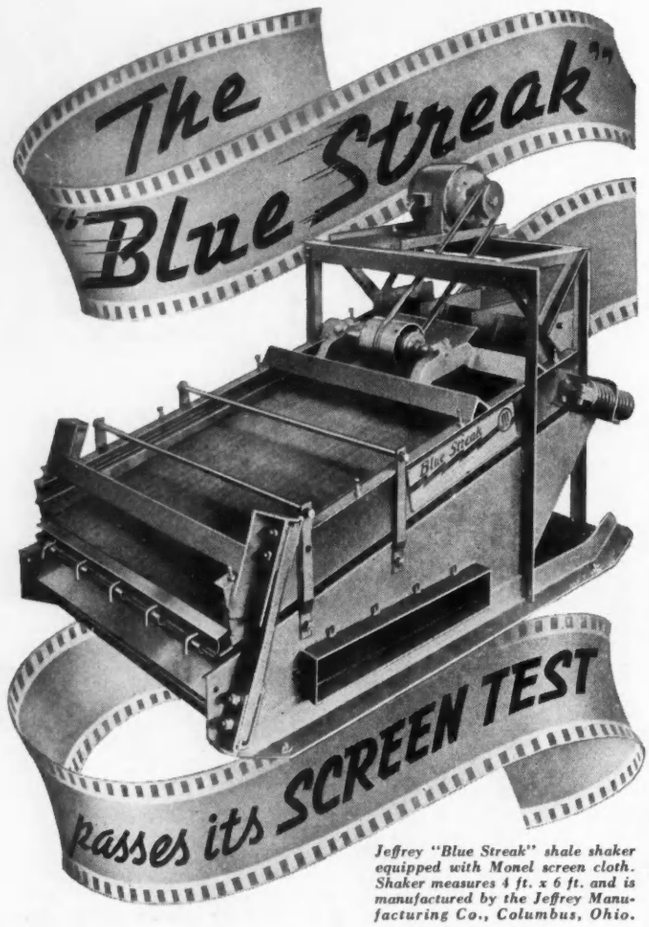
Don't let the expense of gasket failures get you down. Use GARLOCK 7021 and stay on top! It's a winner—always! Order a supply today and be prepared for any emergency by keeping it on hand at all times.

THE GARLOCK PACKING CO.
PALMYRA, NEW YORK

In Canada: The Garlock Packing Co. of Canada Ltd., Montreal, Que.

Tulsa, Okla. Houston, Texas. Los Angeles, Calif.

GARLOCK



Jeffrey "Blue Streak" shale shaker equipped with Monel screen cloth. Shaker measures 4 ft. x 6 ft. and is manufactured by the Jeffrey Manufacturing Co., Columbus, Ohio.

The screen is Monel . . . and on location this shale shaker sets a record for long-time hard service

Picture this spotless new shale shaker out in the field. Not for long does it preserve its clean appearance. But the corrosion-resisting screen of tough Monel does preserve its *shape and efficiency*.

A Monel screen gets plenty of punishment . . . *and can take it.* Vibrating steadily hour after hour, loaded with rotary mud, it withstands the corrosive attack of salt water and hydrogen sulphide. Sharp particles of rock that quickly wear away the average metal, have much less effect on Monel. The Monel screen is not weakened, and so it withstands the mechanical stresses imposed by constant vibration.

Special rectangular weaves of Monel wire cloth offer maximum efficiency and long life. Write for further information about them. Ask for bulletins, "Monel Wire Screen and Filter Cloth," "Engineering Properties of 'K' Monel," "Properties and Uses of Inconel," and "Nickel Bearing Alloys in the Production and Drilling of Petroleum." Address:

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street New York, N. Y.

MONEL

Monel

"Monel" is a registered trade-mark of The International Nickel Company, Inc., which is applied to a nickel alloy containing approximately two-thirds nickel and one-third copper.

AIR CLEANER

The Lincoln Electric Company

The Lincoln Electric Company, Cleveland, Ohio, has developed a new machine which conditions air by filtering out dirt particles and which is claimed to remove approximately 95 percent of the dirt from the air in the vicinity of grinding, welding and other shop operations. The machine also draws smoke and heat away from the work, thus contributing to the efficiency of welders and to the general improvement of shop conditions. It can also be adopted for blowing smoke away where such operation is desired.

The new air conditioning machine, known as the "Linconditioner," has been developed to provide work shops a more economical solution to the problem of cleaning shop air than that obtained with the conventional shop ventilating system. It removes the smoke and dirt at their source rather than after they have combined with large quantities of air. This requires less power. Also, since no air is taken in or blown to the outside of the building, the new machine conserves plant heat.

The "Linconditioner" consists of a motor driven fan which produces suction through a flexible metal tube. The fan draws the air through the flexible tube and exhausts it in a filter which is located in the periphery of the power unit. The flexible tube is supported by a welded steel arm and spring arrangement, so that the nozzle can be shifted to any desired spot within the operating radius of the tubing.

When the equipment is used for removing and filtering the air, a rubber cap is kept over the blower outlet. When used for blowing, the rubber cap is removed and the flexible tube is placed in the blower outlet.

The fan is powered by a ½-horsepower motor. A connection plate is attached to the motor leads to guide in connecting the "Linconditioner" to the supply line or to the welder.

The leads of the "Linconditioner" can be connected directly to the motor studs on the switch of the welder control box if desired. This insures stopping of the "Linconditioner" whenever the welder is not running. Or, if

"Linconditioner" Air Conditioning Machine.

the "Linconditioner" is to be used with any one of several welders, it is often provided with its own starting switch.

A welded steel supporting arm holds the flexible tube in any desired position. The tube can be swung around rapidly, turning in a swivel joint bushing at the top of the power unit. A supporting swing gives additional stiffness to the tubing and can be clamped at any point on the tube to suit the application.

The standard flexible tubing is 10 feet long and permits operation within a circle 14 feet in diameter. Special lengths of tubing up to 40 feet are available.

A short pipe extends from the side of the power unit which leads directly to the chamber above the fan. When the "Linconditioner" is used for suction, this pipe is closed by a rubber cap. By disconnecting the flexible tubing from the swivel joint and inserting the tubing in this blower outlet, the fan draws air through the suction opening and exhausts it through the tubing. This connection is applicable to welding operations in tanks, pipes or large bases in order to blow away the smoke and heat and provide greater comfort for the welding operator.

This Week with the Industry's EQUIPMENT SUPPLIERS

Putnam Named Representative By Jones & Laughlin Steel

N. R. Putnam has been appointed a field representative at the Tulsa office of Jones & Laughlin Steel Corporation, Pittsburgh, it has been announced by L. M. Parsons, vice president in charge of sales for the corporation.

Engaged in the oil business since 1912, Putnam is well known throughout the oil fields of the southern and southwestern part of the country. Graduating in 1911 from the University of Chicago,

N. R. PUTNAM

he worked in the production and field departments of Putnam Development Company, National Refining Company, Tidal Oil, Gypsy Oil, Gulf Pipe Line, and Pure Oil Companies, respectively. From 1924 until his appointment with Jones & Laughlin Steel Corporation, he represented eastern pipe manufacturer as field man, sales engineer, and district sales manager in Oklahoma, Kansas, Texas, New Mexico, and Louisiana.

New General Manager for Fairbanks-Morse Beloit Works

A. E. Ashcraft, Fairbanks, Morse & Co., vice president in charge of manufacturing, has announced the appointment of A. C. Howard to the position of general manager of the company's Beloit, Wisconsin, plant. This position formerly was held by Ashcraft in addition to his executive control of all Fairbanks-Morse factories in the United States and Canada.

Howard has been assistant general manager of the Beloit plant for 6 years. His association with the company began 22 years ago when he was employed as an inspector at the Canadian Fairbanks-Morse Co., Ltd., Toronto factory, which was then engaged in the manufacture of ammunition for the British Government. He subsequently served as general manager of other Fairbanks-Morse factories, both in the United States and Canada.

Allegheny and Ludlum Steel Combine Pacific Coast Offices

Allegheny Steel Company and Ludlum Steel Company announce that effective immediately the Pacific Coast business of both companies will be consolidated under the supervision of James H. Spade, 1417 Santa Fe Avenue, Los Angeles, California.

Complete warehouse stocks of the products of both companies will be established for the convenience of their customers.

Timken Names Marvel Manager of Tube Sales

The Timken Roller Bearing Company has appointed David T. Marvel manager of tube sales. He will have full charge of the sale of all forms of Timken seamless steel tubing. His headquarters will be at the main office in Canton, Ohio.

Chamberlain Now Vice President of Geuder, Paeschke & Frey

A. J. Chamberlain, who has been manager of the Steel Package Division for Geuder, Paeschke & Frey Company of Milwaukee, has been appointed vice president in charge of the Steel Package Division. In this new capacity Chamberlain will retain his former general supervision of engineering, manufacture and the sales organization throughout the country, being assisted, as in the past, in the sales supervision, by Harvey P. Thelen, assistant sales manager.

Koppers history told in new book

The story of Koppers Company, the industrial organization which in 24 years has quietly grown to become a producer of products for nearly every type of industry in the nation, is told for the first time in "Koppers Yearbook—1938," a new book which has just been published.

Primarily a processor of coal, the book states, the company performs all the numerous operations necessary to obtain coke, coke oven gas, tar, light oils, and chemicals which it and other industries convert into an almost countless array of products. They are to be found in stores, mines and churches, on farms and in factories, in basements and boudoirs, and along railroads and highways the nation over.

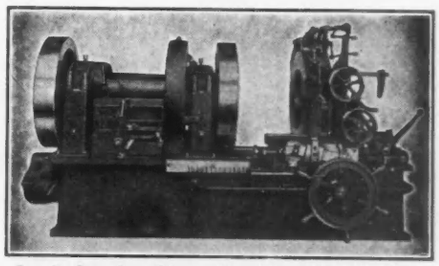
As a manufacturer, Koppers produces preserved wood, highway paving, roofing and waterproofing materials and complete plants and equipment necessary to prepare coal for use as such, or, through coking and distillation, to obtain its products. It builds other general industrial machinery and equipment.

The book also describes Koppers

Standco
NO-SMOKE
STANDCO BRAKE LINING
Nothing novel—no bunk—but it gets the job done without scoring brake rims. See page 1940, Composite Catalog.
Standard Brake Lining Co.

YOU DRILL . . . WE'LL FURNISH the MACHINERY and DRILL PIPE . . .
All thoroughly reconditioned in our own shop . . . for SALE or RENTALS. Call or wire for prices.
NEAL LUCEY COMPANY
2107 QUITMAN ST.-PRESTON 9614
HOUSTON, TEXAS

D. S. MAIR
MACHINERY CORPORATION



Landis Receding Chaser Pipe Threading Machine

COMPLETE LINES
Machine Tools—Metal Working Machinery—Bolt and Pipe Threading Machines—Electric Arc, Spot and Butt Welders—Hand Power and Electric Traveling Cranes—Monorail and Material Handling Equipment — Foundry Equipment — Forge Shop Equipment

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4000 Clay Ave. Telephone Fairfax 1466
STANLEY MAIR

DALLAS, TEXAS
235 Allen Bldg. Telephone 7-2874
CHARLIE HARTER

Company in the light of a taxpayer and employer, with figures which reduce its balance sheet and profit and loss statement to the terms of a one-man enterprise.

Total company figures for 1937 have been divided as though each of its 10,029 employees were in business for himself, with his proportionate share of the company's capital, sales, operating expense and pay roll.

The working capital of each individual, provided by himself or borrowed, would be $11,493. He would sell products, render services and receive investment returns totaling $6685. Of this he would spend $4181 for raw materials, power and manufacturing supplies, freight and other operating expenses. His tax bill would be $181. He would have $178 for plant and machinery replacement, to meet immediate or later requirements. His share for wages paid to himself for carrying on his business for one year would be $1561. There would be $584 remaining to pay interest on his investment and on the money he borrowed, as well as to provide for expansion of his business.

Taxes paid by Koppers Company in 1937 were 75 percent greater than the total amount received by stockholders. This tax bill was equal to six weeks' wages for each of the company's 10,029 employees. It also is pointed out that the major share of these taxes was not based upon company earnings and there were no excess or undistributed profits taxes.

The company increased employment 11 percent while payrolls were 20 percent greater during the year.

Arthur Schaick, American Chain Official, Dies

Arthur P. Van Schaick, 55, vice president and director of American Chain & Cable Company, died June 8 on a train from New Orleans to Chicago. He made his home in Southport, Connecticut. Burial was on the Ludington family lot in Forst Home Cemetery, Milwaukee. Van Schaick was a grandson of the late Harrison Ludington, Milwaukee, a former governor of Wisconsin.

Merco Nordstrom and Pittsburgh Equitable Expand at Los Angeles

Steadily expanding business has obliged Merco Nordstrom Valve Company and Pittsburgh Equitable Meter Company to move into larger quarters at 2808 East 12th Street, Los Angeles.

A new building provides more attractive office space and very much larger warehouse facilities. Larger stocks will be carried. A railroad siding permits of carload shipping and an ample platform gives convenient access for truck shipments. The location is central for oil field and gas trade shipments. The new facilities will materially improve the service to customers.

McPeake Named Detroit Goodrich manager

Ralph McPeake, well known in mechanical rubber goods sales circles for more than 25 years, has been named Detroit, Michigan, district manager of The B. F. Goodrich Company mechanical goods division, it is announced by W. S. Richardson, general sales manager.

Joining the Diamond Rubber Company in 1909 and Goodrich in 1914, McPeake has held various positions as a sales executive.

"That man Johnson has been going around telling lies about you."

"I don't mind that, but if he starts to tell the truth, I'll break his neck!"

Lane-Wells Gulf Coast Superintendents Hold Meeting

This photograph was taken at a meeting of the District Superintendents and Sales Engineers of the Lane-Wells Gulf Coast Division held recently at its plant in Houston, Texas.

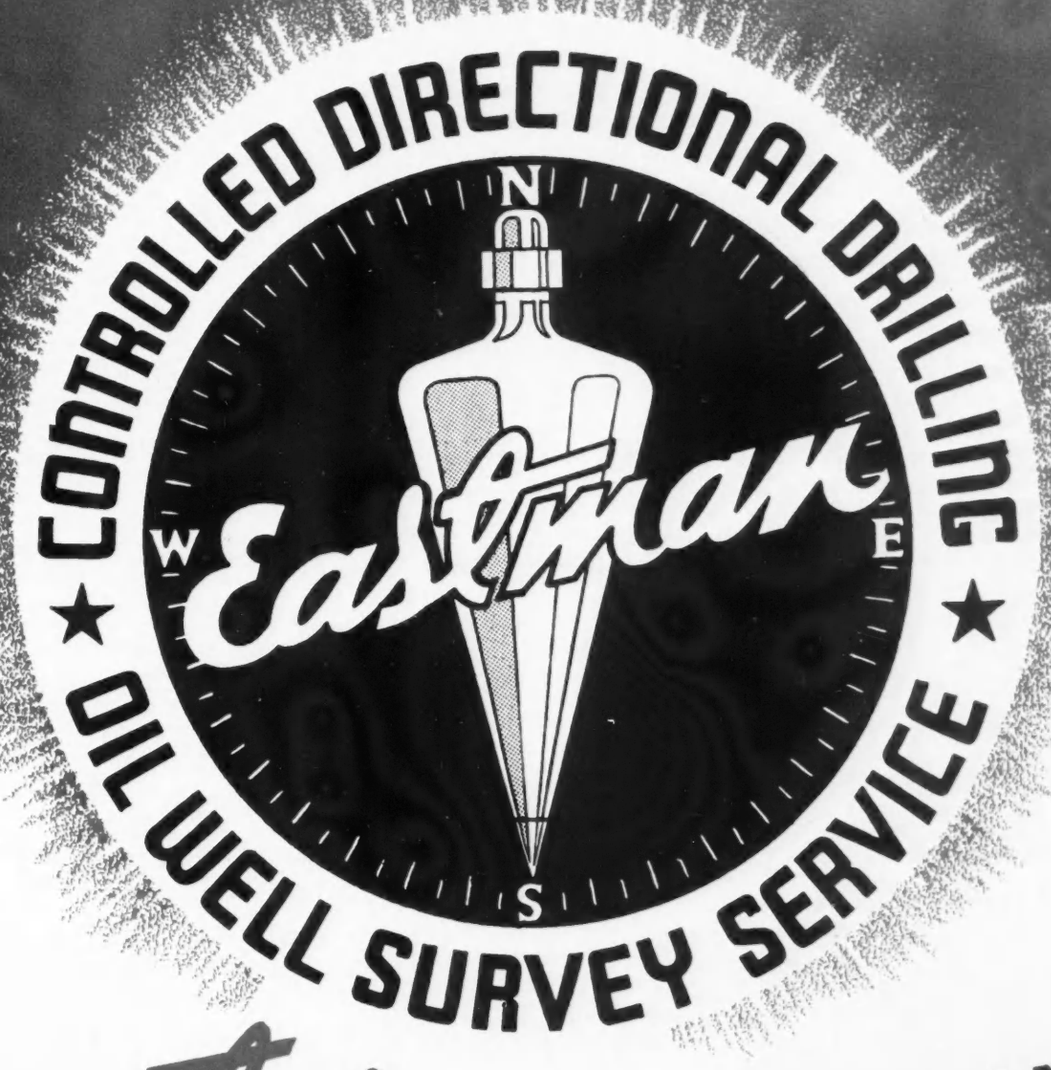
Seated in the front row, left to right, are: J. L. Dore; D. B. McCutchen; M. E. Montrose, Gulf Coast division manager; P. V. Tilbury.

In the first row standing, left to right, are: T. A. Pope, R. A. Whittlesey, W. E. Lynd, W. A. Johnson, E. B. Hearn, G. E. Thompson, J. F. Davis, K. K. Gage, and T. E. Thompson.

In the second row standing, left to right, are: N. L. Baker, C. E. Shilcutt, F. O. Bohn, J. C. Traylor, and H. C. Ham.

In the third row standing is A. T. Hodges.

The Gulf Coast Division includes Texas, Louisiana, Arkansas, Mississippi and New Mexico.



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Squeaks from the Bull Wheel

Purposeful Party

"Johnny, it's cruel to tell you, but your sister promised to become my wife at the party last night. Will you forgive me for taking her away?"

"Aw, shucks, that's what the party was for."

An Honest Firm at Last

The professor had called at nine shops in town for his lost walking-stick and had found it in the tenth.

"Thank you so much indeed," he beamed, as he took possession of it. "Do you know, this must be one of the few honest places in town? I've called at nine shops already and in each I was told that they hadn't got it."

Who's to Blame

"I never had no education. I started to earn my own living at the age of nine," he said. "Self-made, that's what I am, and look at me."

"Well, anyhow, that's better than blaming it on your wife."

Lungs Too

"Mr. Brown left his umbrella again. I believe he'd leave his head if it were loose."

"I dare say you're right. I heard him say only yesterday that he was going to Switzerland for his lungs."

Somewhere

"Transfer, please."

Conductor: "Where to?"

"Can't tell you. It's a surprise party."

No Case

Judge: "Have you ever appeared as a witness before?"

Witness: "Yes, your honor."

Judge: "In what suit?"

Witness: "My blue serge."

Promptly

Count—Did your mother take the news of our engagement the way you had hoped?

Movie Actress—Oh yes, right to my publicity man.

Not Many Rides!

"Now before we start for this ride, I want to tell that I don't smoke, drink or flirt. I visit no wayside inns and I expect to be home by 10 o'clock."

"You're mistaken."

"You mean that I do any of those things?"

"No, I mean about starting for this ride."

Room for One More

A bishop was being patronized by a millionaire.

"I never go to church, bishop," the millionaire said. "Perhaps you've noticed that?"

"Yes, I have noticed it," said the bishop gravely.

"Well, the reason I don't go to church is that there are so many hypocrites there."

"Oh, don't let that keep you away," said the bishop, smiling. "There's always room for one more, you know."

Fair Enough

Says Abie: "Cohen, I've been to the bank to borrow some money, and they say all I need is that you should sign to this note your name. Then I shall have all the money I need. Ain't that fine?"

"Abie," says Cohen reproachfully, "you and I have been friends for many years, and yet you go to the bank when you need money. Abie, you just go again to the bank and say that they should sign the note, and then Cohen will lend you the money!"

History Might Have Been Different If—

Paul Revere had been held up by traffic.

Caesar had recovered after having been put on the spot.

Napoleon had had a plane and a pilot for a non-stop flight from St. Helena to Paris.

Daniel Webster, after having won his first case defending the woodchuck, had had the verdict upset on appeal.

Henry Clay had rather had been wrong and President.

John Paul Jones had been subject to sea-sickness.

Cleopatra had worn long skirts.

Jungle Remedy

Tramp: Kin you give me a cake of soap, Mum?

Do you mean to tell me that you really want some soap?

Yes, Mum. Me pardner's got the hiccups an' I want to scare him.

Robber

"Did you hear the big news?"

"Spill it."

"My dog visited the flea circus and stole the show."

Dire Straits

The Irishman was relating his adventures in the jungle. "Ammunition, food and whiskey had run out," he said, "and we were parched with thirst."

"But wasn't there any water?"

"Sure, but it was no time to be thinking of cleanliness."

Forced Bravery

The boy was the center of a group of admiring men and women. He had crawled out on thin ice to rescue a playmate who had broken through.

"Tell us how you were brave enough to risk your life to save your friend," asked one of the ladies.

"I had to," was the breathless answer. "He had my skates on."

No Hitch-Hiker

"Johnnie, did you want to leave the room?"

"Say, teacher, you don't think I'm standing here hitch-hiking, do yuh?"

No Trouble

The dean of a college was investigating a charge made by some of the girls that the men who lived in the fraternity house next door forgot to lower their shades.

The dean looked out of the sorority window and said:

"Why, I can't see into any of the fraternity house windows."

"Oh, yes you can!" chorused the girls. "All you have to do is to get up on a chair."

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